YALE JOURNAL OF HEALTH POLICY, LAW, AND ETHICS

VOLUME XXII Summer 2023

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The Patient's Voice: Legal Implications of Patient-Reported Outcome Measures

Sharona Hoffman* **and Andy Podgurski****

Abstract:

In recent years, the medical community has paid increasing attention to patients' own assessments of their health status. Even regulatory agencies, such as the Food and Drug Administration and the Centers for Medicare and Medicaid Services, are now interested in patient self-reports. The legal implications of this shift, however, have received little attention. This article begins to fill that gap. It introduces to the legal literature a discussion that has been ongoing in the health care field.

Patient-reported outcome measures (PROMs) are reports of patients' symptoms, treatment outcomes, and health status that are documented directly by patients, typically through electronic questionnaires. In this era of growing efforts to control health care costs, improve care delivery, and combat physician burnout, patients' own input can be invaluable for clinicians as well as researchers, regulators, and insurers. At the same time, however, PROMs have several pitfalls, and the implementation of PROM programs is challenging and complex.

The article argues that health care providers should be keenly aware of potential medical malpractice risks associated with PROMs. In addition, because PROMs collect a plethora of sensitive information about pain, sexual function, anxiety, and other matters, the HIPAA Privacy Rule should be revised to address PROMs specifically. The Article further posits that it would be premature for regulatory agencies or private insurers to require PROM submission at this time. It also details strategies, such as use of artificial intelligence, to strengthen PROMs and facilitate their integration into clinical practice and other arenas.

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INTRODUCTION

Anyone who reads the news or follows policy debates is aware of grave concerns about the U.S. health care system. A typical article from *Harvard Health Publishing* begins as follows: "Here's a question that's been on my mind and perhaps yours: Is the US healthcare system expensive, complicated, dysfunctional, or broken? The simple answer is yes to all."[1] In an effort to address some of the system's grave shortcomings, health care and policy experts have developed concepts such as value-based care[2] and comparative effectiveness research.[3] They are also harnessing big data and artificial intelligence to benefit patients.[4] Improving the system using any of these strategies, however, will depend on validly and reliably measuring health care outcomes.[5]

This Article focuses on a particular means of assessing health care outcomes, called patient-reported outcome measures (PROMs).[6] Little has been written thus far about the legal implications of PROM use.[7] This Article begins to fill that

1 Robert H. Shmerling, *Is our healthcare system broken?*, HARV. HEALTH PUBL'G (July 13, 2021), https://www.health.harvard.edu/blog/is-our-healthcare-system-broken-202107132542.

2 John E. McDonough & Eli Y. Adashi, *The Center for Medicare and Medicaid Innovation–Toward Value-Based Care*, 327 JAMA 1957, 1957 (2022) ("[T]he drive for value-based care remains widely endorsed by both political parties and across most segments of the health care sector."); Lucas Pantaleon, *Why Measuring Outcomes is Important in Health Care*, 33 J. VETERINARY INTERNAL MED. 356, 356 (2019) ("A new strategy has been introduced in human health care, namely, achieving the best outcomes for the lowest cost and thus maximizing value for patients."); *Value-Based Care*, CLEVELAND CLINIC, https://my.clevelandclinic.org/health/articles/15938-value-based-care (last visited Oct. 19, 2020) (Value-based care is "the idea of improving quality and outcomes for patients" through standardizing "healthcare processes through best practices, as in any business.").

3 INSTITUTE OF MED., INITIAL NATIONAL PRIORITIES FOR COMPARATIVE EFFECTIVENESS RESEARCH 13 (2009) ("Comparative effectiveness research (CER) is the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care."); Amit Dang & Kirandeep Kaur, *Comparative Effectiveness Research and its Utility in In-Clinic Practice*, 7 PERSPECT. CLINICAL RSCH. 9, 9-10 (2016).

4 Yan Cheng Yang et al., *Influential Usage of Big Data and Artificial Intelligence in Healthcare*, COMPUTATIONAL MATH METHODS MED., 2021, at 1 (2021).

5 42 U.S.C. § 1320e(a)(2)(A) (explaining that comparative effectiveness research involves "evaluating and comparing health outcomes and the clinical effectiveness, risks, and benefits of 2 or more medical treatments, services, and items . . . "); Thomas Davenport & Ravi Kalakota, *The Potential for Artificial Intelligence in Healthcare*, 6 FUTURE HEALTHCARE J. 94, 94 (2019) (explaining that machine learning applications (a common form of AI) most often need to be trained on datasets with known outcome variables); Pantaleon, *supra* note 2, at 356 ("In value-based care, the only true measures of quality are the outcomes that matter to patients.").

6 CENTERS FOR MEDICARE & MEDICAID SERVS., PATIENT REPORTED OUTCOME MEASURES (2022), https://mmshub.cms.gov/sites/default/files/Patient-Reported-Outcome-Measures.pdf [hereinafter CMS 2022].

7 NAT. QUALITY F., PATIENT-REPORTED OUTCOMES: BEST PRACTICES ON SELECTION AND DATA

gap, providing an overview of legal and technical PROM-related concerns. It introduces to the legal literature a discussion that has been ongoing in the medical community.[8] Such analysis is particularly timely because the U.S. Food and Drug Administration (FDA) and the Centers for Medicare and Medicaid Services (CMS) have begun using PROMS for regulatory purposes.[9] For example, approximately twenty-six percent of new drugs approved between 2016 and 2020 included patient reported outcome-related statements in labeling.[10] Furthermore, physicians, who are increasingly pressed for time, may soon come to rely on PROMS as a partial replacement for extensive face-to-face conversations with patients.[11]

Traditionally, individual and population health care outcomes have been assessed based on clinical measures such as mortality, number of hospital-acquired infections, number of avoidable hospital readmissions, blood pressure changes, and blood sugar levels.[12] But what about patients' own voices? Aren't patients' opinions about whether medical interventions improved or diminished their quality of life equally significant? And what about important conditions that cannot be clinically measured, such as pain, anxiety, or impaired sexual functioning?[13]

In some instances, patients receive medications for their ailments (e.g., a rash or joint pain) but are not asked to return for follow-up visits. In those instances, physicians may obtain no information about treatment outcomes at all. In the absence of follow-up assessments, it may be difficult to determine which therapies work best for patients. This is a problem not only for individual patients and physicians but also for medical science in general.

COLLECTION 23 (2020), https://www.qualityforum.org/Publications/2020/09/PatientReported_Outcomes__Best_Practices_on_Selection_and_Data_Collection_-_Final_Technical_Report.aspx ("Legal considerations are generally unexplored currently.").

8 *See, e.g.,* Samantha Cruz Rivera et al., *Ethical Considerations for the Inclusion of Patient-Reported Outcomes in Clinical Research: The PRO Ethics Guidelines*, 327 JAMA 1910, 1910-19 (2022).

9 *See infra* Parts III.B and IV.

10 Ari Gnanasakthy et al., *A Review of Patient-Reported Outcome Labeling of FDA-Approved New Drugs (2016-2020): Counts, Categories, and Comprehensibility*, 25 VALUE HEALTH 647, 650 (2022). For a discussion of labeling, see *infra* note 303 and accompanying text.

11 *See infra* notes 90-91 and accompanying text.

12 Martha Hostetter & Sarah Klein, *Using Patient Reported Outcomes to Improve Health Care Quality*, COMMON. FUND NEWS., https://www.commonwealthfund.org/publications/newsletter-article/using-patient-reported-outcomes-improve-health-care-quality.

13 *See, e.g.,* William A. Fisher et al., *Standards for Clinical Trials in Male and Female Sexual Dysfunction: II. Patient-Reported Outcome Measures*, 13 J SEXUAL MED. 1818, 1818 (2016) ("PROs are essential for assessing male and female sexual dysfunction and treatment response, including symptom frequency and severity, personal distress, satisfaction, and other measurements of sexual and general health-related quality of life.").

PROMs can fill these data vacuums. PROMs can be defined as reports of the "status of a patient's health condition that come [] directly from the patient without interpretation of the patient's response by a clinician or anyone else."[14] An additional type of input is the patient-reported experience measure (PREM), which refers to patients' perceptions of their interactions with the health care system or clinicians.[15] This Article focuses on PROMs, which measure patients' symptoms, functionality, and quality of life.[16]

PROMs typically take the form of questionnaires that patients are asked to complete.[17] They can be used for a variety of purposes. First and foremost, they are used in clinical care to inform physicians about patients' conditions and assist them in making diagnostic and treatment decisions.[18] In addition, PROMs are employed for purposes of 1) clinical research, including comparative effectiveness studies, 2) quality improvement initiatives, 3) FDA oversight and labeling, and 4) performance measurement and other assessments by insurers.[19]

PROMs have many potential benefits, especially when employed in conjunction with clinician-reported outcomes and administrative data.[20] In addition to the benefits discussed above,[21] they can promote more informed clinical decision making, improve physician-patient communications, and foster patient empowerment.[22] As a potent example of PROM benefits, one study found that monitoring PROMs increased the survival of metastatic cancer patients by

14 Michael Fleischmann & Brett Vaughan, *The Challenges and Opportunities of Using Patient Reported Outcome Measures (PROMs) in Clinical Practice*, 28 INT'L J. OSTEOPATHIC MED. 56, 56 (2018).

15 Anne Neubert et al., *Understanding the Use of Patient-Reported Data by Health Care Insurers: A Scoping Review*, 15 PLOS ONE, 2020, at 2; Barak D. Richman & Kevin A. Schulman, *Are Patient Satisfaction Instruments Harming Both Patients and Physicians?*, 328 JAMA 2209, 2209-10 (2022).

16 Joanne Greenhalgh et al., *How Do Patient Reported Outcome Measures (PROMs) Support Clinician-Patient Communication and Patient Care? A Realist Synthesis*, 2 J. PATIENT-REPORTED OUTCOMES 42, 45 (2018).

17 *See infra* notes 36-40.

18 Ian Porter et al., *Integrating Patient Reported Outcome Measures (PROMs) into Routine Nurse-Led Primary Care for Patients with Multimorbidity: A Feasibility and Acceptability Study*, 19 HEALTH QUALITY LIFE OUTCOMES 133, 134 (2021).

19 Neubert et al., *supra* note 17, at 1; Lee Squitieri et al., *The Role of Patient-Reported Outcome Measures in Value-Based Payment Reform*, 20 VALUE HEALTH 834, 834 (2017); Rahma Warsame & Anita D'Souza, *Patient Reported Outcomes Have Arrived: A Practical Overview for Clinicians in Using Patient Reported Outcomes in Oncology*, 94 MAYO CLINICAL PROC. 2291, 2292-98 (2019); MASS. MED. SOC., PATIENT-REPORTED OUTCOME MEASURES: CURRENT STATE AND MMS PRINCIPLES (2018), https://www.massmed.org/proms/.

20 Fatima Al Sayah et al., *A Multi-Level Approach for the Use of Routinely Collected Patient-reported Outcome Measures (PROMs) Data in Healthcare Systems*, 5 J. PATIENT-REPORTED OUTCOMES 98, 98 (Supp. 2 2021).

21 *See supra* notes 21-25 and accompanying text.

22 *See infra* Part I.B.

5.2 months.[23] But PROMs come with a number of pitfalls and shortcomings.[24]

One of us has personal experience with PROMs. Professor Podgurski has Parkinson's disease. One neurologist's office routinely gave him a tablet computer and asked him to complete long questionnaires prior to each of his appointments. He did this with difficulty because of his limited dexterity and because he felt pressured to complete the survey quickly, before being called in to see the doctor. Yet, the doctor never mentioned the PROMs and seemed unaware of the information Professor Podgurski provided. When doctors disregard PROMS that patients have worked hard to complete, patients may feel frustrated and resentful.[25]

More serious shortcomings exist as well. For example, PROM questionnaires may not be validated and reliable and thus be of poor quality.[26] Patients may not fully answer all questions, thus providing incomplete data.[27] Patients' responses may be biased by a desire to please the physician or by personality traits that influence their tolerance for discomfort.[28] An additional problem for research initiatives is that the group of patients who are able and willing to complete PROMs may not be representative of the patient population as a whole, thereby yielding biased research results.[29] Some patients do not have access to the technology needed to complete PROMS or have disabilities or language barriers that prevent them from doing so.[30]

Health care providers may have their own difficulties with PROMs. Physicians may not know how to interpret PROM scores or determine if score

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23 Ethan Basch & Allison M. Deal, *Overall Survival Results of a Trial Assessing Patient-Reported Outcomes for Symptom Monitoring During Routine Cancer Treatment*, 318 JAMA 197, 198 (2017) ("Median overall survival was 31.2 months (95% CI, 24.5-39.6) in the PRO group and 26.0 months (95% CI, 22.1-30.9) in the usual care group."). See also *infra* note 111 and accompanying text.

24 Al Sayah et al., *supra* note 20, at 4-5.

25 Olalekan Lee Aiyegbusi et al., *Patient and Clinician Opinions of Patient Reported Outcome Measures (PROMs) in the Management of Patients with Rare Diseases: A Qualitative Study*, 18 HEALTH & QUALITY LIFE OUTCOMES 177, 185 (2020) ("The time constraints during clinics could prevent clinicians from acting on ePROM results and this could become a barrier to the use of ePROMs."); Sara Heath, *Only 1% of Docs Use Patient-Reported Outcomes Measures (PROMs)*, PATIENT ENGAGEMENT HIT (Nov. 2, 2022), https://patientengagementhit.com/news/only-1-of-docs-use-patient-reported-outcomes-measures-proms#:~:text=Only%201%25%20of%20Docs%20Use,%2DReported%20Outcomes%20Measures%20(PROMs). See also *infra* note 207 and accompanying text.

26 *See infra* Part I.C.1.a.

27 *See infra* Part I.C.1.d (discussing missing data).

28 *See infra* Part I.C.1.b (discussing response shift and response bias).

29 *See infra* notes 166-186 and accompanying text.

30 *See infra* notes 179-182 and accompanying text.

changes are clinically meaningful.[31] Clinicians may also feel that they are already overwhelmed and burnt out and that adding PROM use to their workload stretches them further towards the breaking point.[32]

These challenges and others generate several legal concerns. Because PROMs may solicit sensitive information about patients' quality of life, they raise questions about the adequacy of medical privacy protections. In addition, clinicians may rightly worry about medical malpractice liability associated with PROMs. The appropriateness of using PROMs for regulatory or reimbursement purposes is also open to debate.

The remainder of the paper proceeds as follows. Part I discusses the attributes, benefits, and risks of PROM use. Part II focuses on the clinical use of PROMs and analyzes privacy and medical malpractice concerns. It examines relevant HIPAA Privacy Rule requirements and exemptions that could threaten PROM confidentiality. In addition, this section posits that PROM use can generate malpractice risks for clinicians and health care entities under a variety of circumstances. These include health care providers ignoring data that are disclosed in PROMs because of time and workload constraints, relying on PROMs excessively when other diagnostic tools should have been used, or failing to implement PROMs when doing so has become the standard of care.

Part III assesses PROM use in research and FDA regulation. It highlights critiques of current PROM utilization in clinical studies. It also discusses the FDA's acceptance of PROMs for medical device assessment and labeling purposes. Part IV focuses on PROM use for performance measurement and insurance coverage.

Part V formulates recommendations to address PROM-related legal concerns. It develops technical and administrative recommendations for PROM selection and implementation that would reduce the likelihood of malpractice claims and enhance PROM integrity. These include automation of PROM review using artificial intelligence, psychometric evaluations, pilot programs, stakeholder input, and more. Part V also recommends enhanced vigilance regarding data security, a modification to the HIPAA Privacy Rule, the development of clinical practice guidelines regarding PROM use, and patient education and notice concerning PROMs. Additionally, it outlines how PROMs might be used to support either plaintiffs or defendants in malpractice litigation. Part V further argues that it is premature for the FDA and CMS to mandate PROM use because of this tool's potential weaknesses. At the same time, financial incentive programs for voluntary PROM adopters are desirable. Part VI concludes.

31 *See infra* Part I.C.1.e (discussing PROM interpretability).

32 *See infra* Part I.C.2.b.

I. PROMS ATTRIBUTES, BENEFITS, AND RISKS

PROMs can offer important insights into patient welfare, but they must be expertly selected and implemented so that they reflect human-centered design.[33] This Part discusses the nature of PROMs along with their benefits and pitfalls.

A. What Are PROMs?

PROMs are usually standardized questionnaires that solicit patients' input about their general health status and specific medical conditions.[34] They focus on patients' perceptions of their symptoms, ability to function, health behaviors, health care experience, and health-related quality of life.[35] PROM scores can be compared over time to determine the efficacy of medical interventions.[36] Patients can be asked to answer questionnaires online before or after their visits or can be given tablet computers to use at the clinician's office.[37] Administrators can also use paper forms, though many find electronic PROMs preferable.[38]

One example is the following short form sleep survey:[39]

33 Lauren Landry, *What Is Human-Centered Design?*, HARV. BUS. SCH. ONLINE (Dec. 15, 2020), https://online.hbs.edu/blog/post/what-is-human-centered-design ("Human-centered design is a problem-solving technique that puts real people at the center of the development process, enabling you to create products and services that resonate and are tailored to your audience's needs.").

34 Charlotte Kingsley & Sanjiv Patel, *Patient-Reported Outcome Measures and Patient-Reported Experience Measures*, 17 BJA EDUC. 137, 137 (2017).

35 NATIONAL QUALITY FORUM, *supra* note 7, at 5 (listing "five categories of PROs"); Manoj Sivan et al., *Using Condition Specific Patient Reported Outcome Measures for Long COVID*, 376 BMJ 257 (2022).

36 Jill Dawson et al., *Routine Use of Patient Reported Outcome Measures in Healthcare Settings*, 340 BMJ 464, 464 (2010).

37 DAVID CELLA ET AL., PATIENT-REPORTED OUTCOMES IN PERFORMANCE MEASUREMENT 7 (2015), https://www.ncbi.nlm.nih.gov/books/NBK424378/pdf/Bookshelf_NBK424378.pdf; Rachel C. Sisodia et al., *Digital Disparities: Lessons Learned from a Patient Reported Outcomes Program During the COVID-19 Pandemic*, 28 J. AM. MED. INFORMATICS ASS'N 2265, 2265 (2021).

38 Jennifer Y. Yu et al., *Electronic Forms for Patient Reported Outcome Measures (PROMs) are an Effective, Time-Efficient, and Cost Minimizing Alternative to Paper Forms*, 19 PEDIATRIC RHEUMATOLOGY 67, 67 (2021).

39 *ASCQ-Me v2.0 - Sleep Impact Short Form10Oct2017*, HEALTH MEASURES, https://www.healthmeasures.net/search-view-measures?task=Search.search (last visited Dec. 11, 2022) (<Under "search parameters, enter "sleep impact short form" and select "English language.">) Reproduced with the permission of the American Institutes for Research, Copyright 2010-2023.

ASCQ-Me® v2.0 Sleep Impact - Short Form

Sleep Impact Short Form

Please respond to each question or statement by marking one box per row.

		Never	Rarely	Sometimes	Often	Always
SleepImpactQ2	In the past 7 days, how often did you stay up most of the night because you could not fall asleep?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
SleepImpactQ5	In the past 7 days, how often was it very easy for you to fall asleep?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
SleepImpactQ8	In the past 7 days, how often did you have a lot of trouble falling asleep	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
SleepImpactQ10	In the past 7 days, how often did you stay up all night because you could not fall asleep?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
SleepImpactQ11	In the past 7 days, how often did you stay up half of the night because you could not fall asleep?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

A second example is the Oxford hip score, which uses twelve questions to evaluate hip pain and function in patients that may need hip replacements.[40] Patients are asked to rate different types of hip pain (e.g., nighttime pain, shooting pain) and how it affects various functions, such as walking, climbing stairs, bathing, and shopping and are given five choices for each answer to indicate range of discomfort severity.[41] Patients' ratings in response to the individual questions are combined to generate an overall score.[42] Thus, in the hip survey, scores in the range of 40-48 indicated that treatment is most likely not needed, and, at the other end of the spectrum, scores in the range of 0-19 indicate the presence of severe arthritis and a likely need for surgery.[43]

PROMs can systematically collect information that would otherwise be difficult to obtain. For example, PROMs are particularly useful for those treating pain because pain cannot be objectively measured.[44] Information about patients' symptoms, functionality, and quality of life can also be invaluable in the specialties of oncology,[45] cardiology,[46] neurology,[47] rheumatology,[48] and more.

40 OXFORD HIP SCORE, http://www.orthopaedicscore.com/scorepages/oxford_hip_score.html (last visited Dec. 11, 2022).

41 *Id.*

42 Dawson et al., *supra* note 36, at 464.

43 OXFORD HIP SCORE, *supra* note 40.

44 Michelle M. Holmes et al., *The Impact of Patient-Reported Outcome Measures in Clinical Practice for Pain: A Systematic Review*, 26 QUALITY LIFE RSCH. 245, 249 (2017).

45 Roxanne E. Jensen et al., *Review of Electronic Patient-Reported Outcomes Systems Used in Cancer Clinical Care*, 10 J. ONCOLOGY PRAC. e215, e215 (2014); Warsame & D'Souza, *supra* note

In recent draft guidance, the FDA stated that PROMs are the best means of assessing the following:

- A feeling or experience known only to the patient, such as pain, itch, shortness of breath as no one else has direct access to feelings except for the patient
- Any type of functioning or activity that is part of the patients' day-to-day life
- The patients' satisfaction or dissatisfaction with their treatment and/or functioning
- Degree of impact on day-to-day life associated with one or more symptoms.[49]

PROMs are not a novel concept, and they have been embraced internationally. As early as 1975, Sweden incorporated PROMs into clinical databases that were disease specific.[50] By 2000, PROMs were used by some U.S. practices, and since 2009, the United Kingdom has required that PROMs be collected for patients that undergo certain elective surgeries.[51] The International Consortium for Health Outcomes Measurement (ICHOM), founded in 2012, states that its mission is to "unlock the potential of value-based health care by defining global Patient-Centered Outcome Measures . . . that really matter to patients for the most relevant medical conditions and by driving adoption and reporting of these measures worldwide."[52] To that end, ICHOM focuses on PROMs – outcomes that are reported directly by patients without being interpreted by clinicians.[53]

19, at 2291.

46 Jonathan Davis, *Do Patient-Reported Outcome Measures Measure Up? A Qualitative Study to Examine Perceptions and Experiences with Heart Failure PROMs Among Diverse, Low-Income Patients*, 6 J. PATIENT-REPORTED OUTCOMES 6, 6 (2022).

47 Olga Damman et al., *Using PROMs during Routine Medical Consultations: The Perspectives of People with Parkinson's Disease and their Health Professionals*, 22 HEALTH EXPECTATIONS 939, 939 (2019).

48 Brittany R. Lapin et al., *Patient-Reported Experience with Patient-Reported Outcome Measures in Adult Patients Seen in Rheumatology Clinics*, 30 QUALITY LIFE RSCH. 1073, 1073 (2021).

49 *Patient-Focused Drug Development: Selecting, Developing, or Modifying Fit-for Purpose Clinical Outcome Assessments: Guidance for Industry, Food and Drug Administration Staff, and Other Stakeholders*, Draft Guidance, U.S. DEP'T OF HEALTH & HUMAN SERVS. ET AL. (June 2022), https://www.fda.gov/media/159500/download.

50 Fleischmann & Vaughan, *supra* note 16, at 57.

51 *Id.*

52 *Frequently Asked Questions*, ICHOM, https://www.ichom.org/faqs/ (last visited Dec. 11, 2022).

53 *Electronic PROMs: What's the Right Solution for Your Organization?* 1, INT'L CONSORTIUM HEALTH OUTCOMES MEASUREMENT (2014), https://ichom.org/files/articles/ePROM-

In 2004, the National Institutes of Health (NIH) launched the Patient Reported Outcomes Measurement Information System (PROMIS).[54] Researchers used advanced psychometric[55] techniques to validate existing survey instruments and to create better tools.[56] As of this writing, the PROMIS website features 559 English-language surveys relating to anxiety, depression, fatigue, pain, sleep disturbance, physical functioning, satisfaction with participation in social roles, and much more.[57] These are available free of charge to anyone who wishes to access them.[58] Many experts consider PROMIS to be the gold standard for patient-generated assessments.[59] PROMIS aims to standardize PROMs just as blood chemistry outcomes are standardized.[60] PROMIS measures produce T-scores, which can be defined as "standard scores with a mean of 50 and standard deviation of 10 in a reference population (usually U.S. general population)."[61] This enables comparison of an individual's health status to that of the general population, or in some cases, a sub-population of interest (e.g., cancer patients).[62]

Other PROM tools exist as well. One is the Medicare Health Outcomes Survey (HOS).[63] The HOS is used in Medicare Advantage plans in order to gather health status data for purposes of quality improvement, monitoring and

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White-Paper.pdf.

54 *Patient Reported Outcomes Measurement Information System: Program Snapshot*, NAT. INSTITUTES HEALTH, https://commonfund.nih.gov/promis/index (last visited Jan. 29, 2019); Douglas M. Lawson, *PROMIS: a New Tool for the Clinician Scientist*, 55 J. CAN. CHIROPRACTOR ASS'N 16, 16 (2011).

55 Psychometrics is "the branch of psychology concerned with the quantification and measurement of mental attributes, behavior, performance, and the like, as well as with the design, analysis, and improvement of the tests, questionnaires, and other instruments used in such measurement." *Psychometrics*, AM. PSYCH. ASS'N, https://dictionary.apa.org/psychometrics (last visited Dec. 11, 2022).

56 Lawson, *supra* note 54, at 16.

57 *Id.* at 17; *Intro to PROMIS*, HEALTH MEASURES, https://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis (last visited Dec. 11, 2022); *Search and View Measures*, HEALTH MEASURES, https://www.healthmeasures.net/search-view-measures (last visited Apr. 22, 2023) (<under "search parameters," select "English language," and enter the following terms separately: anxiety, depression, fatigue, pain, sleep disturbance, physical functioning, satisfaction with participation in social roles.>) [hereinafter *View Measures*].

58 Lawson, *supra* note 54, at 16.

59 Jonathan P. Evans et al., *The National Institutes of Health Patient Reported Outcomes Measurement Information System (PROMIS): A View from the UK*, 9 PATIENT-RELATED OUTCOME MEASURES 345, 350 (2018).

60 *Id.* at 346.

61 Nan E. Rothrock et al., *Development and Validation of an Interpretive Guide for PROMIS Scores*, 4 J. PATIENT-REPORTED OUTCOMES 1, 2 (2020).

62 Thi Xuan Mai Tran et al., *Utility of the Patient-Reported Outcomes Measurement Information System (PROMIS) to Measure Primary Health Outcomes in Cancer Patients: A Systematic Review*, 29 SUPPORTIVE CARE CANCER 1723, 1723 (2021).

63 *Welcome to the Medicare Health Outcomes Survey (HOS) Website*, CENTERS FOR MEDICARE & MEDICAID SERVS., https://www.hosonline.org/ (last modified Oct. 20, 2022).

rewarding plan performance, and helping participants make informed decisions.[64] Each year a random sample of participants is surveyed, and the respondents are surveyed again after two years.[65] Respondents are asked questions about their quality of life and daily functioning including matters such as mental health, incontinence, exercise, fall risks and more.[66] After the second survey, change scores are calculated and each participant's physical and mental health status is rated as "better than expected," "as expected," or "worse than expected."[67] CMS calculates summary HOS results for each Medicare Advantage Organization based on its members' aggregated outcomes.[68] CMS includes HOS measures in the Medicare Star Ratings program.[69] The program scores Medicare Advantage plans using a range of one to five stars, and consumers can consult these ratings for purposes of plan selection.[70] An additional tool is Focus on Therapeutic Outcomes (FOTO), which collects self-reported data from patients who underwent outpatient rehabilitation.[71] FOTO assesses functional status changes in patients by comparing PROMs collected before, during, and after rehabilitation.[72]

The extent of PROM use in the United States is unclear. According to one source, in 2016 only one-fifth of hospitals routinely used PROMs.[73] A 2020 study noted that PROM adoption has been "limited" and that there is a "paucity of information on large-scale systemwide implementations that include diverse specialties and clinical settings."[74] The slow rate of PROM adoption is likely

64 *Id.*

65 *Id.*

66 Andrew Reamer, *Medicare Health Outcomes Survey (HOS) – CMS invites comments to OMB (by 6/9)*, AM. ECON. ASS'N, https://www.aeaweb.org/forum/1951/medicare-health-outcomes-survey-hos-cms-invites-comments-omb (last visited Apr. 20, 2023); *Health Outcomes Survey*, CIGNA, https://medicareproviders.cigna.com/static/medicareproviders-cigna-com/docs/health-outcomes-survey-flyer.pdf (last visited Apr. 20, 2023).

67 Reamer, *supra* note 66.

68 *Id.*

69 *Id.*

70 *Id.*; *How to Compare Plans Using the Medicare Star Rating System*, MEDICARE INTERACTIVE, https://www.medicareinteractive.org/get-answers/medicare-health-coverage-options/changing-medicare-coverage/how-to-compare-plans-using-the-medicare-star-rating-systems (last visited Apr. 20, 2023).

71 *Frequently Asked Questions*, FOTO PATIENT OUTCOMES, https://fotoinc.com/frequently-asked-questions/ (last visited Dec. 11, 2022).

72 *Patient Reported Outcomes Measures,* CENTER FOR MEDICARE AND MEDICAID SERVS, (Sept. 2021), https://www.cms.gov/files/document/blueprint-patient-reported-outcome-measures.pdf.

73 Jennifer Bresnick, *Why Aren't Hospitals Using Patient-Reported Outcomes Data?*, HEALTH IT ANALYTICS (Aug. 2, 2016), https://healthitanalytics.com/news/why-arent-hospitals-using-patient-reported-outcomes-data.

74 Rachel C. Sisodia et al., *Factors Associated with Increased Collection of Patient-Reported Outcomes Within a Large Health Care System*, 3 JAMA NETWORK OPEN e202764 (2020); *see also*

attributable to a variety of barriers that are discussed in Part I.C below.[75]

To ease the burden of PROM completion and minimize the number of questions presented to patients, PROMs can leverage computer adaptive technology (CAT).[76] Sometimes trained through machine learning (a type of artificial intelligence), CAT adapts the questions asked of each patient to the individual's prior responses.[77] Tailoring questionnaires to the responder's symptoms and circumstances and eliminating irrelevant standardized queries can cut completion time by as much as fifty percent.[78]

PROMs should be integrated into patients' electronic health records (EHR) so that clinicians can easily review and maintain documentation concerning patient-reported information.[79] Institutions can design their own integration mechanisms, can opt for EHR systems that embed PROMs, or can purchase independent commercial products to deploy PROMs.[80] For example, experts at the University of Minnesota and other colleagues developed the Patient Reporting and Insight System from Minnesota (PRISM).[81] PRISM enables patients to use a mobile app to fill out questionnaires and then integrates the responses into patients' EHRs.[82] Integrating PROMs into EHRs, however, can be challenging because of cost, logistics, and technological complexities.[83]

Dana Gelb Safran & Aparna Higgins, *Getting to The Next Generation of Performance Measures for Value-Based Payment*, HEALTH AFFS. FOREFRONT (Jan. 29, 2019), https://www.healthaffairs.org/do/10.1377/forefront.20190128.477681/full/ ("To date, systematic use of PROMs in clinical practice has occurred in only a few settings.").

75 *See infra* Part I.C; Heath, *supra* note 25.

76 Liam T. Kane et al., *Use of Computerized Adaptive Testing to Develop More Concise Patient-Reported Outcome Measures*, 5 JBJS OPEN ACCESS 2020, at 1.

77 *Id.* at 3; *see also* Conrad Harrison et al., *Maximizing the Potential of Patient-Reported Assessments by Using the Open-Source Concerto Platform with Computerized Adaptive Testing and Machine Learning*, 22 J. MED. INTERNET RSCH. 2020, at 2.

78 Scott Morris et al., *Advancing the Efficiency and Efficacy of Patient Reported Outcomes with Multivariate Computer Adaptive Testing*, 24 J. AM. MED. INFO. ASS'N 897, 898 (2017); Harrison et al., *supra* note 77, at 2.

79 Marzyeh Amini et al., *Facilitators and Barriers for Implementing Patient-Reported Outcome Measures in Clinical Care: An Academic Center's Initial Experience*, 125 HEALTH POL'Y 1247, 1254 (2021); Heather Taffet Gold et al., *Implementation and Early Adaptation of Patient-Reported Outcome Measures into an Electronic Health Record: A Technical Report*, 26 J. HEALTH INFORMATICS 129, 130 (2020); NATIONAL QUALITY FORUM, *supra* note 7, at 21-22; Josef Stehlik et al., *Implementation of Real-Time Assessment of Patient-Reported Outcomes in a Heart Failure Clinic: A Feasibility Study*, 23 J. CARDIAC FAILURE 813, 815 (2017).

80 Judith F. Baumhauer et al., *The Cost of Patient-Reported Outcomes in Medicine*, NEJM CATALYST 2 (Jan. 25, 2018), https://proms.waitematadhb.govt.nz/assets/Uploads/The-Cost-of-PROMs.pdf.

81 *PRISM*, UNIV. MINN. INSTITUTE HEALTH INFORMATICS, https://healthinformatics.umn.edu/research/research-projects/prism (last visited Dec. 11, 2022).

82 *Id.*

83 Liam H. Wong & James E. Meeker, *The Promise of Computer Adaptive Testing in Collection of Orthopedic Outcomes: An Evaluation of PROMIS Utilization*, 6 J. PATIENT-REPORTED

B. PROM Benefits

PROMs can assist physicians in making medical decisions.[84] Based on patients' ratings of their discomfort and other quality of life indicators, doctors may change their course of treatment.[85] Some outcomes, such as mortality, infections, and disease recurrence can be measured objectively.[86] But outcomes such as pain levels and psychological wellbeing cannot be objectively assessed, and thus PROMs can complement objective measures and provide valuable insights about patients.[87]

Ideally, physicians should be able to gather comprehensive information about patients' perceptions of their health status by questioning them extensively during office visits, but sadly, that is often not possible in practice. Contemporary physicians are generally pressed for time and are often pressured by employers to limit the duration of visits to increase patient volume and profits.[88] The average primary care visit, for instance, lasts only fifteen to twenty minutes.[89] Therefore, PROMs may be the only way for clinicians to collect in-depth information about patients' quality of life.

PROMs enable physicians to focus on symptoms, side effects, and outcomes that matter most to patients.[90] To illustrate, a prostate cancer patient may care deeply not only about survival, but also about impotence and incontinence after

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OUTCOMES 1, 12 (2022) (citing Daniell C. Lavallee et al., *Incorporating Patient-Reported Outcomes into Health Care to Engage Patients and Enhance Care*, 35 HEALTH AFF. 575, 578-80 (2016)).

84 Holmes et al., *supra* note 44 at 252.

85 Susan J. Bartlett et al., *Patient-Reported Outcomes in RA Care Improve Patient Communication, Decision-Making, Satisfaction and Confidence: Qualitative Results*, 59 RHEUMATOLOGY 1662, 1667 (2020) ("[P]hysicians indicated that reviewing PRO results influenced decisions to change or adjust RA [rheumatoid arthritis] treatment in 20% of encounters.").

86 Rachel Morley & Tristan Leech, *Optimal Assessment Tools in Assessing Breast Surgery: Patient Reported Outcome Measures (PROMs) vs. Objective Measures*, 8 GLAND SURGERY 416, 416 (2019).

87 *Id.*; Paul G. Kluetz et al., *Informing the Tolerability of Cancer Treatments Using Patient-Reported Outcome Measures: Summary of an FDA and Critical Path Institute Workshop*, 21 VALUE HEALTH 742, 745 (2018) ("[C]linician reporting of symptomatic adverse events and patient reporting of symptomatic adverse events are complementary"); Walter F. Stewart et al., *Combining Patient Reported Outcomes and EHR Data to Understand Population Level Treatment Needs: Correcting for Selection Bias in the Migraine Signature Study*, 5 J. PATIENT-REPORTED OUTCOMES 132, 141 (2021).

88 Sharona Hoffman, *Healing the Healers: Legal Remedies for Physician Burnout*, 18 YALE J. HEALTH, POL'Y, L. & ETHICS 56, 87-92 (2018) (discussing physicians' inability to spend adequate time with patients).

89 *Id.* at 88.

90 Youssef Ben Bouazza et al., *Patient-Reported Outcome Measures (PROMs) in the Management of Lung Cancer: A Systematic Review*, 113 LUNG CANCER 140, 146 (2017) (discussing the benefits of PROMs).

treatment.[91] If doctors collect PROMs about these complications, they will be better equipped to discuss them with patients and to tailor treatment recommendations to patients' concerns.

In some cases, PROMs may save costs.[92] One study found that careful surveillance of lung cancer patients using PROMs reduced the need for follow-up clinical visits and imaging.[93] Although patients in the experimental arm of the study had a higher number of visits, their costs were lower because their symptoms were better controlled.[94] In other cases, patients with knee, hip, or back pain whose PROMs reveal that they are high functioning and that their pain is tolerable could be spared expensive, unnecessary, and sometimes risky surgeries.[95] A group of researchers focusing on spine surgery noted that PROMs have recently become an important tool in assessing the cost-effectiveness of procedures such as cervical and lumbar fusions.[96] Information about quality of life outcomes can thus inform decisions about treatment options.[97]

Since PROMs come directly from patients, they are free of any bias that might be introduced by clinicians interpreting what patients tell them.[98] At least in some instances, therefore, they can provide better data than physicians' descriptions of symptoms.[99] More accurate information can better enable clinicians to make sound treatment decisions.[100]

PROMs can potentially improve the physician-patient relationship by enhancing communication and patient engagement.[101] PROM questionnaires can help patients remember their symptoms and drug side effects.[102] They can induce

91 Health Catalyst Editors, *Unlocking the Power of Patient-Reported Outcome Measures (PROMs)*, HEALTH CATALYST (Feb. 26, 2019), https://www.healthcatalyst.com/insights/unlocking-the-power-of-patient-reported-outcome-measures-proms/.

92 Thibaut Lizée et al., *Cost-Effectiveness of Web-Based Patient-Reported Outcome Surveillance in Patients with Lung Cancer*, 14 J. THORACIC ONCOLOGY 1012, 1012-13 (2019).

93 *Id.*

94 *Id.* at 1015-18.

95 Safran & Higgins, *supra* note 74. *See also infra* notes 97-99 and accompanying text.

96 Thomas J. Lee et al., *Cost-effectiveness Applications of Patient-reported Outcome Measures (PROMs) in Spine Surgery*, 33 CLINICAL SPINE SURGERY 140, 140 (2020).

97 *Id.*

98 Warsame & D'Souza, *supra* note 19, at 2291(citing Donald L. Patrick et al., *Patient Reported Outcomes to Support Medical Product Labeling Claims: FDA Perspective*, 2007 VALUE HEALTH S125-S137 (Supp 2. 2007)).

99 *Id*. *But see infra* Part I.C (discussing PROM shortcomings and concerns).

100 Jonathan Field et al., *PROMs Data: Can It Be Used to Make Decisions for Individual Patients? A Narrative Review*, 10 PATIENT RELATED OUTCOME MEASURES. 233, 235 (2019).

101 Holmes et al., *supra* note 44, at 252; Danielle C. Lavallee et al., *Incorporating Patient-Reported Outcomes into Health Care to Engage Patients and Enhance Care*, 35 HEALTH AFFS. 575, 575 (2016).

102 Lapin et al., *supra* note 48, at 1076-77 (citing Claire F. Snyder et al., *Feasibility and Value of Patient View Point: A Web System for Patient-Reported Outcomes Assessment in Clinical Practice*, 22 PSYCH. ONCOLOGY, 895, 895-901 (2012)).

patients to think more deeply about their health status and to deepen their understanding of their medical conditions.[103] PROMs can also make patients feel empowered to discuss concerns with their physicians because clinicians have solicited their views through the questionnaires.[104] PROMs can help patients articulate their concerns and raise problems they may have otherwise been reluctant to report.[105] They can therefore facilitate conversations with clinicians, enhance shared decision making, and increase patients' satisfaction with their care.[106]

One study focused on PROM use for rheumatology patients at the Cleveland Clinic.[107] It revealed that seventy-eight percent agreed or strongly agreed that answering PROM queries improved communication with their physicians, and seventy percent agreed or strongly agreed that doing so made them feel that they had more control over their own care.[108]

According to some estimates, oncologists miss symptoms, impaired functioning, and adverse effects of treatment fifty to seventy-four percent of the time.[109] Physician awareness and response to these matters can generate dramatic benefits for patients. In one study, monitoring patient-reported outcomes increased the survival of individuals with metastatic cancer by 5.2 months.[110] Participants in this study were randomly assigned either to receive usual care or to answer questions concerning twelve common symptoms via a web-based platform at and between office visits.[111] Reports of severe or worsening symptoms would trigger emails to clinical nurses, and oncologists received summaries of patients' symptom histories at each appointment.[112]

PROMs can also provide invaluable information concerning emerging diseases, such as COVID-19. A 2020 study, for example, showed that seventy-six percent of patients who had been hospitalized for COVID-19 continued to

103 Joanne Greenhalgh et al., *supra* note 18, at 63.

104 *Id.*; Bartlett et al., *supra* note 85, at 1668.

105 *See* Warsame & D'Souza, *supra* note 19, at 2297-8.

106 Field et al., *supra* note 100, at 235; Lapin et al., *supra* note 48, at 1076-7. *But see* Part I.C.2.a (discussing patients' concerns about PROMs).

107 Lapin et al., *supra* note 48, at 1074.

108 *Id.* at 1076.

109 Warsame & D'Souza, *supra* note 19, at 2297; *see also*, Massimo Di Maio et al., *Symptomatic Toxicities Experienced During Anticancer Treatment: Agreement Between Patient and Physician Reporting in Three Randomized Trials*, 33 J. CLINICAL ONCOLOGY 910, 914 (2015) ("[S]ubjective toxicities associated with anticancer treatments are at high risk of under-reporting by physicians," recommending that patient-reported data be incorporated "into toxicity reports in clinical trials.").

110 Basch & Deal, *supra* note 23, at 198.

111 *Id.* at 197.

112 *Id.*

have abnormal PROMs three months after the onset of their initial symptoms.[113] A third of these individuals reported "at least moderate impairment in major dimensions of quality of life."[114] Clinicians could learn a great deal about long COVID from such responses and use them as a guide for treating patients and alleviating their symptoms.[115]

Public access to anonymized or summarized PROMs could enable patients to make more educated choices with respect to clinicians, medical facilities, and therapeutic options and to have realistic expectations about treatments and recovery.[116] Individuals could select providers based on patient accounts of their post-treatment quality of life, such as whether they suffered incontinence or impotence after prostate surgery.[117] Patients could also gain insight concerning others' experiences during treatment and recovery, so that they know what to anticipate and can perhaps be less anxious or concerned.[118]

Insurers may use PROMs to determine which health care providers and services to include in their networks.[119] Insurers may also use PROMs to create profiles of high-risk patients that will incur high costs and to develop programs and interventions that might improve their health.[120] While proactive interventions could help patients, one might worry that insurers will at the same time use PROM-based high-risk patient profiles as a justification for raising group premium rates.[121]

Quality improvement initiatives can benefit from PROMs as well.[122] Patients' own perceptions regarding treatment outcomes and the care they receive are an important component of assessing the performance of health care

113 Alyson W. Wong et al., *Patient-Reported Outcome Measures after COVID-19: A Prospective Cohort Study*, 56 J. EUR. RESPIRATORY 2020.

114 *Id.*

115 Phillip Berry, *Use Patient Reported Outcome Measures (PROMs) in Treatment of Long Covid*, 373 BMJ n1260 (2021) ("If there was ever a condition where the use of PROMs should be prioritised, and traditional economic models challenged, it is post-covid-19.").

116 Health Catalyst Editors, *supra* note 91; William B. Weeks & James N. Weinstein, *Patient-Reported Data Can Help People Make Better Health Care Choices*, HARV. BUS. REV. (Sept. 21, 2015), https://hbr.org/2015/09/patient-reported-data-can-help-people-make-better-health-care-choices.

117 Health Catalyst Editors, *supra* note 91.

118 *Id.*

119 Neubert et al., *supra* note 17, at 7.

120 *Id.* at 7-8.

121 *How Insurance Rates Are Determined*, OHIO DEP'T INS., https://insurance.ohio.gov/consumers/resources/how-insurance-rates-are-determined (last visited Apr. 20, 2023) ("All insurance companies use data and statistics to predict levels of risk for various individuals or groups. This risk calculation information is also used to develop rating plans.").

122 A. Costal Tirado et al., *Using Patient-Reported Outcome Measures for Quality Improvement in Clinical Genetics: An Exploratory Study*, 26 J. GENETIC COUNSELING 1017, 1025 (2017).

providers and identifying areas for improvement.[123]

C. PROM Shortcomings and Concerns

Despite their many potential benefits, PROMs face strong critics who voice significant concerns about the tools and their implementation.[124] PROM data can be particularly challenging because they consist of patients' subjective assessments rather than objective medical test or examination results. This Part analyzes data quality and administrative challenges that constitute barriers to PROM implementation in both clinical and other contexts.

1. Data Quality

A large number of shortcomings can taint data quality and undermine their usefulness in clinical and other settings. This section analyzes the primary sources of data quality problems.

a. Reliability, Responsiveness, and Validity

To be useful, PROMs must be reliable, responsive, and valid.[125] Not all PROMs are of equal quality. [126] Reliability means the degree to which a measure is internally consistent and reproducible.[127] Internal consistency refers to "correlation between different items in the measure."[128] If a survey is internally consistent, responders will answer items that test the same value similarly.[129] For example, if the survey tests optimism, optimistic respondents will give high ratings to optimism indicators and low ratings to pessimism indicators throughout.[130]

123 *Id.* at 1027; *Patient-reported Outcome Measures (PROMs)*, CANADIAN INSTITUTE HEALTH INFO., https://www.cihi.ca/en/patient-reported-outcome-measures-proms (last visited Dec. 11, 2022).

124 *See* Al Sayah et al., *supra* note 20, at 4-5.

125 Marlene H. Frost et al., *What Is Sufficient Evidence for the Reliability and Validity of Patient-Reported Outcome Measures?*, 10 VALUE HEALTH S94, S94 (2007); Angela Ju & Allison Tong, *Considerations and Challenges in Selecting Patient-Reported Outcome Measures for Clinical Trials in Nephrology*, 12 CLIN. J. AM. SOC'Y NEPHROLOGY 1882, 1883-84 (2017).

126 Laith Alrubaiy et al., *Assessing Patient Reported Outcome Measures: A Practical Guide for Gastroenterologists*, 2 UNITED EUR. GASTROENTEROLOGY J. 463, 463 (2014) ("Not all PROM instruments currently used in research and clinical practice in gastroenterology have gone through a rigorous development methodology.").

127 Ju & Tong, *supra* note 125, at 1883.

128 *Id.*

129 *Id.*

130 Fiona Middleton, *The 4 Types of Reliability, Definitions, Examples, Methods*, SCRIBBR

Reproducibility refers to a tool's ability to generate the same result when it is used multiple times in similar circumstances.[131] Thus, if a person takes a survey repeatedly without any change in health status, the individual's responses should be very similar.[132]

Responsiveness is a measure's ability to discern outcome changes over time.[133] This includes both changes in health status and changes in response to medical interventions.[134] Responsiveness may be limited by a variety of factors, such as questions that offer too few answer choices and do not enable patients to indicate subtle alterations in their condition.[135] Similarly, questionnaires that are administered too frequently may not give patients time to note meaningful differences in how they feel.

Validity is the extent to which a measure actually assesses what it claims to evaluate.[136] This attribute can further be broken down into several categories. Criterion validity is the degree to which a measure relates to a gold standard, if one exists.[137] Content validity refers to a measure's ability to cover all dimensions that are important to the condition in question. Construct validity is the degree to which the measure evaluates the intended outcome (e.g., fatigue).[138] External validity has to do with whether identified causal relationships can be generalized to other patients and circumstances.[139] Internal validity is the extent to which observed results truly represent a causal relationship.[140] Other forms of validity have also been recognized.[141]

Experts use special techniques to validate survey instruments.[142] For

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(July 16, 2021), https://www.scribbr.com/methodology/types-of-reliability/.

131 Alrubaiy et al., *supra* note 126, at 465 ("The principle of reliability is that applying the PROM in different occasions or by different observers produces similar results"); Ju & Tong, *supra* note 125, at 1883.

132 Ju & Tong, *supra* note 125, at 1883 ("Reproducibility is assessed by examining the degree of agreement between scores on the measure at first assessment and when reassessed"); DAVID CELLA ET AL., *supra* note 37, at 39.

133 Ju & Tong, *supra* note 125, at 1884.

134 CELLA ET AL., *supra* note 37, at 40.

135 *Id.* at 48.

136 Ju & Tong, *supra* note 125, at 1884.

137 *Id.*

138 *Id.* at 1883-84.

139 Allan Steckler & Kenneth R. McLeroy, *The Importance of External Validity*, 98 AM. J. PUB. HEALTH 9 (2008).

140 *Id.*; Cecilia M. Patino & Juliana Carvalho Ferreira, *Internal and External Validity: Can You Apply Research Study Results to Your Patients?*, 44 J. BRASILEIRO PNEUMOLOGICA 183, 183 (2018).

141 Ju & Tong, *supra* note 125, at 1883-84; Godfred O. Boateng et al., *Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer*, 6 FRONTIERS PUB. HEALTH 2018, at 13-14.

142 Boateng et al., *supra* note 141, at 13.

instance, validity can sometimes be measured by comparing PROM scores to other related variables, such as clinical outcomes noted in EHRs.[143] To illustrate, one study focused on sleep and compared self-reports to objective measures of sleep.[144] It found that on average, participants slept six hours but reported sleeping 0.8 hours longer than they did. Analysts who are aware of such discrepancies might determine that a sleep PROM is not valid or adjust for the discrepancies when analyzing data.

Not all PROMs are validated with equal rigor.[145] Furthermore, if a PROM is used for different purposes (e.g., clinical care, research, performance measures) or multiple populations (e.g., older patients, people with different underlying diseases), it may require different validations.[146]

b. Response Shift and Response Bias

A phenomenon known as response shift can impact PROMs' integrity as well.[147] Response shift occurs because of a change in a responder's perspective, for example, because of an alteration in the individual's internal measurement standards or values.[148] Therefore, response variations over time may reflect differences in a patient's attitude rather than health status.

Response bias is yet another challenge. At times, individuals' responses aim to reflect what they think the questioner wants to hear or what will impress the questioner rather than to be completely truthful.[149] This bias may also be called "social desirability bias."[150] In the voting arena, for example, researchers have found that individuals untruthfully claim to have voted when they have not gone to the polls because they believe that is the correct and admirable answer to

143 Ju & Tong, *supra* note 125, at 1884.

144 Diane S. Lauderdale et al., *Sleep Duration: How Well Do Self-Reports Reflect Objective Measures? The CARDIA Sleep Study*, 19 EPIDEMIOLOGY 838, 838 (2008).

145 Kate Churruca et al., *Patient-Reported Outcome Measures (PROMs): A Review of Generic and Condition-Specific Measures and a Discussion of Trends and Issues*, 24 HEALTH EXPECTATIONS 1015, 1021 (2021); Ju & Tong, *supra* note 125, at 1882.

146 Churruca et al., *supra* note 145, at 1021; John T. Farrar, *Advances in Clinical Research Methodology for Pain Clinical Trials*, 6 NATURE MED. 1284, 1289 (2010) ("[C]areful consideration should be given to each particular use, as subtle changes in the questions used or the population of interest can affect the results.").

147 CELLA ET AL., *supra* note 37, at 33.

148 *Id.*

149 Allyson L. Holbrook & Jon A. Krosnick, *Social Desirability Bias in Voter Turnout Reports: Tests Using the Item Count Technique*, 74 PUB. OP. Q. 37, 37 (2010); Grace M. Turner et al., *General Practitioners' Views on Use of Patient Reported Outcome Measures in Primary Care: A Cross-Sectional Survey and Qualitative Study*, 21 BMC FAM. PRAC. 14, 20 (2020).

150 Holbrook & Krosnick, *supra* note 149, at 37.

provide.[151] Similarly, some physicians feel that patients' answers are influenced by a desire to please the physician or gain some benefit by overstating or understating their symptoms.[152]

c. PROM Selection

Determining which PROMs will best fit patients' and clinicians' needs is a challenging task.[153] Given the breadth of choices, it is difficult to identify PROMs that are the most appropriate, valid, and illuminating for each condition, treatment, and practice.[154] One group of experts suggests a general approach to PROM selection including:

> (1) Establish PROMs selection committee; (2) Identify the focus, scope, and type of PROM measurement; (3) Identify potential PROM(s); (4) Review practical considerations for each of the identified PROMs; (5) Review measurement properties of shortlisted PROMs; (6) Review patient acceptance of shortlisted PROMs; (7) Recommend a PROM(s); and (8) Pilot the selected PROM(s).[155]

Other experts emphasize that selected PROMs must be reliable, responsive, and valid and must minimize the burdens of administering, answering (including for those with cultural and language barriers), reviewing, and incorporating PROM questionnaires into EHRs.[156]

Beyond such general recommendations, however, there is no consensus as to

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151 *Id.*

152 Turner et al., *supra* note 149, at 7.

153 Churruca et al., *supra* note 153, at 1021; San Keller et al., *Selecting Patient-Reported Outcome Measures to Contribute to Primary Care Performance Measurement: A Mixed Methods Approach*, 35 J. GEN. INTERNAL MED. 2687, 2688 (2020); Caroline B. Terwee et al., *Common Patient-Reported Outcomes across ICHOM Standard Sets: The Potential Contribution of PROMIS®*, 21 BMC MED. INFORMATICS & DECISION MAKING 259, 259 (2021).

154 Fatima Al Sayah et al., *Selection of Patient-Reported Outcome Measures (PROMs) for Use in Health Systems*, 5 J. PATIENT REP. OUTCOMES 99, 99 (Supp. 2 2021); Ju & Tong, *supra* note 125, at 1882 ("[S]electing a robust and validated PROM from the plethora of available measures is challenging"); Tran et al., *supra* note 62, at 1724 ("The selection of a meaningful PRO instrument that provides accurate assessment and, at the same time, maximizes feasibility for clinical use is, thus, a challenge.").

155 Al Sayah et al., *supra* note 154, at 99.

156 CELLA ET AL., *supra* note 36 at 38 (Table 4: Primary Criteria for Evaluating and Selecting Patient-Reported Outcome Measures (PROMS) for Use in Performance Measurement); *see also supra* Parts I.C.1.a (discussing reliability, responsiveness, and validity), I.C.e (discussing interpretability), and I.C.2 (discussing administrative challenges for respondents and health care providers).

PROM choices for particular conditions and no standardized PROM sets that are endorsed by professional organizations.[157] Thus, researchers continue to explore and compare PROMs. The NIH states that its PROMIS project has generated over four-hundred publications.[158] For example, one study compared PROMIS general health questionnaires for individuals who underwent carpal tunnel hand surgery with "the performance of region- and condition-specific PROMs such as the Michigan Hand Questionnaire (MHQ) and the Boston Carpal Tunnel Questionnaire (BCTQ)."[159] It found that the PROMIS physical function PROMs were not useful for evaluating these surgical patients but the upper extremity and pain interference domains were.[160]

PROMs can address generic health status or specific symptoms and conditions.[161] Generic health status measures are broad and relevant to a variety of conditions, assessing degree of impairment and quality of life.[162] Some experts recommend use of a combination of generic and condition-specific PROMs to obtain the most meaningful data.[163]

d. Missing Data and PROM Timing

Some health care providers resist PROMs adoption because of concern about the accuracy and comprehensiveness of the data.[164] While patients can be asked to complete PROMs, they are not forced to do so or to answer every query in the questionnaire.

Several studies highlight the problem of missing data.[165] Some respondents

157 Massachusetts Medical Society, *supra* note 19, at 9.

158 *Patient-Reported Outcome Measurement Information System (PROMIS): Program Snapshot*, NATIONAL INSTITUTES HEALTH, https://commonfund.nih.gov/promis/index (last viewed Jan. 29, 2019).

159 David N. Bernstein et al., *Responsiveness of the PROMIS and its Concurrent Validity with Other Region- and Condition-specific PROMs in Patients Undergoing Carpal Tunnel Release*, 477 CLINICAL ORTHOPEDIC RELATED RES. 2544, 2544 (2019).

160 *Id.* at 2545.

161 Ju & Tong, *supra* note 125, at 1882.

162 *Id.* (providing the examples of "the 36-Item Short Form Health Survey (SF-36) and the Sickness Impact Profile).

163 CELLA ET AL., *supra* note 37, at 48.

164 Ryan P. Jacobson et al., *Can Patient-Reported Outcomes Measurement Information System® (PROMIS) Measures Accurately Enhance Understanding of Acceptable Symptoms and Functioning in Primary Care?*, 4 J PATIENT-REPORTED OUTCOMES 1, 2 (2020).

165 *See* Fatima Al Sayah et al., *supra* note 20 at 5; Olawale F. Ayilara, et. al, *Impact of Missing Data on Bias and Precision when Estimating Change in Patient-Reported Outcomes from a Clinical Registry*, 17 HEALTH & QUALITY LIFE OUTCOMES 106, 107 (2019); Ethan Basch et al., *Methods for Developing Patient-Reported Outcome-Based Performance Measures (PRO-PMs)*, 18 VALUE HEALTH 493, 501 (2015).

may skip questions or stop answering questionnaires prematurely because they are fatigued, confused, bored with the activity, or are called into their appointment and thus run out of time.[166] In addition, some patients may choose not to respond to questionnaires or be unable to do so because of disabilities, language barriers, or lack of access to technology.[167] One determinant of response rates may be the degree to which health care providers encourage patients to answer PROMs.[168]

Response rate discrepancies can skew results in research studies or oversight initiatives that compare health care providers. Treatment outcomes of those who diligently employ PROMs, including with very sick patients, may look worse than outcomes from entities that are more lax about urging patients to fill out PROMs.[169] At the same time, resource-poor organizations may not have the funds to implement PROMs and may not be included in clinical trials that solicit PROMs.[170] If that is the case, little to no data would be gathered from important segments of the population that suffer socioeconomic disadvantages.[171] The results of such research would be of questionable external validity and likely would not be generalizable to excluded populations.[172]

Furthermore, vital details may be missing from PROM questionnaires. To illustrate, hip replacement surgery may not be as helpful for individuals who have other conditions that affect mobility, but questionnaires may not ask patients about these comorbidities.[173] Cultural background may also influence how people answer PROMs, causing some people to interpret questions differently from others or to be reluctant to respond negatively about their health or treatment.[174]

A further complication is that multiple choice questions, which are the format for many PROMs, may not capture all necessary information. A study relating to pain concluded that narrative descriptions of pain provided the best

166 *See infra* notes 199-202 and accompanying text (discussing survey fatigue).

167 *See* Basch et al., *supra* note 165, at 503; infra notes 193-198 and accompanying text (discussing various access barriers).

168 Basch et al., *supra* note 165, at 503.

169 *Id. at 501.*

170 *See infra* notes 211-12 and accompanying text (discussing implementation costs).

171 Rivera et al., *supra* note 10, at 1911 ("PRO research may not reflect the perspectives of underserved groups such as older individuals, socioeconomically disadvantaged populations, and racial and ethnic minority groups which could threaten the scientific validity of results.").

172 *Id.*; *see also* Sharona Hoffman & Andy Podgurski, *The Use and Misuse of Biomedical Data: Is Bigger Really Better?*, 39 AM. J. L. MED 497, 521-23 (2013) (discussing selection bias, which occurs "when the subset of individuals studied is not representative of the patient population of interest."). See *supra* note 121 and accompanying text for discussion of external validity.

173 Dawson et al., *supra* note 36, at 466.

174 CELLA ET AL., *supra* note 37, at 39.

insight into patients' experiences.[175] If analysts do not collect appropriate auxiliary data about responders, they may not be able to contextualize and interpret PROM results correctly.[176]

Using PROMs for purposes other than clinical care (such as research or FDA oversight) can be problematic for additional reasons as well. Survey responders may be a self-selected group that differs from non-responders in important ways, including health status, socioeconomic status, or other attributes.[177] Individuals with low literacy or with language barriers are unlikely to complete PROMs.[178] Individuals with cognitive decline or other intellectual or physical disabilities may also be unable to complete PROMs.[179] If many potential participants face these barriers, PROM responders would not be representative of the relevant patient population at large (e.g., all patients with heart failure), and there will be significant gaps in the data collected.[180]

Comparison and assessment of treatment outcomes may also be hindered by the timing of PROM collection.[181] If different patients submit PROMs at different intervals following a medical intervention, they will not provide information that is easy to synthesize.[182] Determining the appropriate point at which to solicit PROMs is itself complicated.[183] Collecting PROMs too soon after an intervention may not provide complete data as to its impact, but collecting them after significant time has passed makes it difficult to attribute all reported phenomena to the intervention at issue rather than to other intervening factors.[184]

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175 Timothy H. Wideman, et al., *The Multimodal Assessment Model of Pain: A Novel Framework for Further Integrating the Subjective Pain Experience within Research and Practice*, 35 CLINICAL J. PAIN 212, 215 (2019).

176 Dawson et al., *supra* note 36, at 466.

177 *Id.* at 466.

178 CELLA ET AL., *supra* note 37, at 28-31.

179 *Id.* at 31; Jessica M. Kramer & Ariel Schwartz, *Reducing Barriers to Patient-Reported Outcome Measures for People with Cognitive Impairments*, 98 ARCHIVES PHYSICAL MED. & REHAB. 1705, 1705 (2017); Hahn Nguyen et al., *A Review of the Barriers to Using Patient-Reported Outcomes (PROs) and Patient-Reported Outcome Measures (PROMs) in Routine Cancer Care*, 68 J. MED. RADIATION SCI. 186, 188 (2021).

180 *Id.*; Walter F. Stewart et al., *supra* note 87, at 140 (discussing significant differences between respondents and non-respondents that resulted in differences between respondents and the total source population).

181 Al Sayah et al., *supra* note 154, at 5 (referring to "varying time points of PROM(s) measurement"); Dawson et al., *supra* note 36, at 466 ("Follow-up times should be the same for all patients in relation to the intervention or other key event.").

182 Dawson et al., *supra* note 36, at 466.

183 Nick Black, *Patient Reported Outcome Measures Could Help Transform Healthcare*, 346 BMJ 1167, 1169 (2013).

184 *Id.*

e. Interpretability

In order to be useful, PROMs data must be available in formats that are accessible and easy to interpret.[185] In many cases, clinicians do not know how to interpret PROMs and integrate them into patient care.[186] Clinicians must easily be able to determine what changes in PROM scores mean and whether they indicate significant improvement or deterioration in a patient's condition.[187] As the National Quality Forum noted, "PROM scores and results must be integrated and viewed as actionable values upon a quick glance to successfully be incorporated into the clinical treatment plan."[188] Ideally, patients should also be able to view and understand their PROMs.[189] Raw scores alone, without explanation and contextualization, might be of little value to providers and the patients they serve.[190]

2. Administrative Challenges

Implementing a PROMs program can be challenging, even with high-quality PROMs. PROMs might face resistance from both patients and providers, as detailed below. Health care organizations should be keenly aware of these challenges and proceed with caution.

a. Patient Concerns

A variety of obstacles may hinder PROM completion. Patients may find that PROMs are collected through a platform that is inaccessible or difficult to use or that questions are hard to understand.[191]

If patients are not given tablet computers at the clinician's office or are not able to seek assistance while using them, they may ignore requests for PROMs.[192] In one instance, Mass General Brigham found that when it discontinued tablet use because of COVID-19, significant racial disparities in the rate of PROM

185 *See* Basch et al., *supra* note 165, at 503; NATIONAL QUALITY FORUM, *supra* note 7, at 20.

186 Nguyen et al., *supra* note 179, at 191.

187 NATIONAL QUALITY FORUM, *supra* note 7, at 20.

188 *Id.*; *see* Stehlik et al., *supra* note 79, at 815 ("It will also be important to determine the best approaches with which to share the results with the patients so that the understand the meaning of the scores and remain engaged in the process of serial PRO assessment.").

189 NATIONAL QUALITY FORUM, *supra* note 7, at 20.

190 *Id.* ("Real-time information and interpretation must be available to accompany PROM scores.").

191 Stine Thestrup Hansen et al., *User Experiences on Implementation of Patient Reported Outcome Measures (PROMs) in a Haematological Outpatient Clinic*, 4 J. PATIENT-REPORTED OUTCOMES 87, 96 (2020); MASS. MED. SOC., *supra* note 19, at 6-7.

192 MASS. MED. SOC., *supra* note 19, at 6-7.

completion developed.[193] Patients identifying as Black provided PROMs at half the rate of White patients, and self-identifying Hispanics essentially did not fill them out at all, perhaps because of problems accessing computers and the Internet at home.[194] On the other hand, patients with certain disabilities such as Parkinson's disease may not have the dexterity to work with tablet computers in the clinic and might prefer to use their home computers.[195] Others with learning disabilities, cognitive decline, or mental health conditions may not be able to complete PROMs on their own at all.[196]

Survey fatigue is an additional concern.[197] If patients are inundated with requests for PROMs, they may fill out questionnaires as quickly as possible without adequate thought, respond to only some of the queries, or ignore questionnaires altogether.[198] According to one source, respondents generally stop answering questions after thirty queries.[199] Thus, survey fatigue could contribute to low response rates, missing data, and poor data quality in PROMs.[200] Note that in the research context, however, participants will have different expectations and may be willing to fill out longer PROMs.[201]

b. Health Care Provider Concerns

Although PROMS can provide valuable information to health care providers,[202] clinicians and staff members may find PROMs to be burdensome and unwelcome additions to their workloads.[203] Burnout among physicians and other health care providers has received increasing attention in recent years.[204] Already over-stretched providers might feel that the added tasks of processing and reviewing PROMs and responding to patient-reported concerns will be unmanageable for them.[205] For example, in one study of an orthopedic medical

193 Sisodia et al., *supra* note 74, at 2266.

194 *Id.*

195 CELLA ET AL., *supra* note 37, at 31 (discussing functional abilities and PROMs completion).

196 Nguyen et al., *supra* note 179, at 188.

197 MASS. MED. SOC., *supra* note 19, at 10.

198 Vikas N. O'Reilly-Shah, *Factors Influencing Healthcare Provider Respondent Fatigue Answering a Globally Administered In-App Survey*, 5 PEERJ 2017, at 2 ("Respondent fatigue, also known as survey fatigue, is a common problem in the collection of survey data.").

199 Health Catalyst Editors, *supra* note 91.

200 Rosaline de Koning et al., *Survey Fatigue During the COVID-19 Pandemic: An Analysis of Neurosurgery Survey Response Rates*, 8 FRONTIERS SURGERY 1, 2 (2021).

201 CELLA ET AL., *supra* note 37, at 42.

202 *See supra* notes 92-102 and accompanying text.

203 MASS. MED. SOC., *supra* note 19, at 7.

204 Hoffman, *supra* note 88, at 56.

205 Hansen et al., *supra* note 191, at 96 ("[N]urses in this study did not use the PROM data

center in Minnesota, researchers found that despite a high patient response rate (68-55%, depending on questionnaire timing), only one percent of physicians used PROM responses in their clinical work.[206] Another study, which involved fourteen U.S. primary care clinics, found that while PROMs readily captured patients' reports of their fall risks and urinary incontinence, this information was coded in EHRs only between three and fourteen percent of the time.[207]

The cost of implementation is another concern.[208] Institutions that adopt PROMs need information technology experts, personnel to maintain the program, and equipment such as tablet computers.[209]

While PROMs can improve the physician-patient relationship by focusing doctors' attention on patient concerns, there is also a risk that they will further diminish the time physicians spend face-to-face with patients.[210] If patients are asked to complete PROMs during their appointments, they may have less time to speak with clinicians than they would otherwise.[211] Patients may find this to be disappointing and frustrating because many prefer as much in-person communication with their providers as possible.[212] Diminished opportunities for such communication can adversely affect the physician-patient relationship.[213] It can also affect treatment outcomes if doctors have less time to examine the patient, speak with the patient, and provide explanations and advice.[214]

Furthermore, health care employers might require doctors to review PROMs online to obtain data about patients' progress and complaints and then reduce the length of already rushed office visits.[215] Many health care organizations pressure

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and explained that lack of time required a focus on mandatory tasks related to treatment, control and documentation."); Health Catalyst Editors, *supra* note 91 ("[I]t can be difficult to know how to push past the landscape of "I can't do one more thing" when it comes to clinician buy-in."); MASS. MED. SOC., *supra* note 19, at 7.

206 Heath, *supra* note 25.

207 Paul J. Barr et al., *No Date for the PROM: the Association between Patient-Reported Health Events and Clinical Coding in Primary Care*, 4 J. PATIENT-REPORTED OUTCOMES 17, 17 (2020).

208 *See generally*, Baumhauer et al., *supra* note 80.

209 MASS. MED. SOC., *supra* note 19, at 8 (discussing implementation costs and barriers to PROM adoption).

210 *Id.* at 9.

211 Evelyn Sharples et al., *A Qualitative Exploration of Attitudes Towards the Use of Outcome Measures in Child and Adolescent Mental Health Services*, 22 CLINICAL CHILD PSYCH. & PSYCHIATRY 219, 222 (2017) (noting that PROMs could take time away from psychotherapy session discussions).

212 Mark L. Fuerst, *Patients Prefer Face-to-Face Communications with Doctors*, 39 ONCOLOGY TIMES 62, 62 (2017).

213 The American College of Obstetricians and Gynecologists Committee on Patient Safety and Quality Improvement & Committee on Health Care for Underserved Women, *Effective Patient-Physician Communication*, Committee Opinion No. 587 (2014).

214 *Id.*

215 Sharples et al., *supra* note 211, at 222; Hoffman, *supra* note 88, at 88 (noting that the

physicians to see more patients and generate more income,[216] and they may consider PROMs a means to further those ends.

II. CLINICAL USE OF PROMS: PRIVACY AND MALPRACTICE IMPLICATIONS

Health care providers should recognize both the benefits and the shortcomings of PROMs when considering their implementation.[217] In addition, clinical use of PROMs raises important legal questions. This Part provides an overview of two vital issues: privacy and malpractice concerns.

A. Privacy

Patients who complete PROMs may be concerned about the privacy of the information they provide.[218] PROM questionnaires often ask patients to disclose information about their pain, ability to function, depression, anxiety, sexual satisfaction, and other sensitive matters.[219] Once PROMs are completed, they are available electronically to multiple clinicians. If appropriate security measures are not implemented, they could also be inadvertently or intentionally disclosed to third parties or compromised through hacking.[220] All identifiable medical information creates privacy concerns.[221] But PROMS may intensify contemporary worries about privacy because of the volume and sensitivity of the collected data.

PROMs are covered by the HIPAA Privacy and Security Rules,[222] whether or not they are integrated into patients' EHRs.[223] Both the Privacy and Security rules apply to health plans, health care clearinghouses, health care providers who transmit health information electronically for purposes of HIPAA-relevant transactions, and their business associates.[224] Business associates would include

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average primary care visit lasts only 15-20 minutes); Nguyen et al., *supra* note 179, at 188 (noting that a frequent complaint is "the time for patients to complete PROMs").

216 Hoffman, *supra* note 88, at 90-91.

217 *See supra* Parts I.B and I.C.

218 Nguyen et al., *supra* note 179, at 191.

219 *See supra* note 57 and accompanying text; Nnenaya Q. Agochukwu, *Validity of the Patient-Reported Outcome Measurement Information System (PROMIS) Sexual Interest and Satisfaction Measures in Men Following Radical Prostatectomy*, 37 J. CLINICAL ONCOLOGY 2017, 2017 (2019).

220 Sharona Hoffman & Andy Podgurski, *In Sickness, Health and Cyberspace: Protecting the Security of Electronic Private Health Information*, 48 B.C. L. REV. 331, 332-35 (2007).

221 Sharona Hoffman, *Privacy and Security – Protecting Patients' Health Information*, 387 NEW ENGL. J. MED. 1913, 1913-16 (2022).

222 45 C.F.R. §§ 160.101-534 (2022); 45 C.F.R. §§ 164.302-.318 (2022).

223 *See supra* notes 79-83 and accompanying text.

224 45 C.F.R. §§ 160.102-160.103 (2022); 42 U.S.C. §17934(a) (2018).

all entities that work with health care providers to collect, process, and store PROMs.[225]

The Privacy Rule establishes that, in general, covered entities must obtain patients' permission before disclosing their medical data to others.[226] The HIPAA Security Rule requires administrative, physical, and technical safeguards to protect the confidentiality and integrity of electronic health information.[227] Consequently, PROMs should not be disclosed to most third parties, such as employers or marketers, without patient consent and should be stored securely.

However, patients should be aware of significant exceptions to the HIPAA regulations. First, covered entities are permitted to divulge patients' medical information without consent for purposes of treatment, payment, and health care operations.[228] Thus, physicians can consult colleagues about patients, and facilities can send treatment information to insurers or use data for quality improvement activities without patients' knowledge. In addition, the Privacy Rule lists a variety of other requests to which covered entities can respond without patient authorization, such as those made for purposes of public health activities, judicial and administrative proceedings, or law enforcement.[229] There is no limit to the number of individuals who can view medical data for these permitted purposes.[230] By some estimates, between 150 and 400 individuals view each patient's EHR.[231]

At the same time, the HIPAA Privacy Rule's "minimum necessary" standard attempts to limit the extent of lawful disclosures. It provides that entities that disclose protected health information pursuant to a legitimate request "must make reasonable efforts to limit protected health information to the minimum necessary to accomplish the intended purpose."[232] There are certain exceptions to the

225 42 U.S.C. §17934(a) (2018); 45 C.F.R. 160.103 (2022). Note that that the privacy of PROMs collected for non-clinical purposes (e.g., research) is also protected. The Privacy Act of 1974 prohibits federal agencies from disclosing individuals' data without their consent unless particular exceptions apply. 5 U.S.C. § 552a(b) (2018). This safeguard would protect PROMs that are handled by the FDA and by federal programs such as Medicare or Medicaid. In addition, the federal research regulations, also known as the Common Rule, require that study participants provide informed consent for the use of any identifiable private information, which would include PROMs. 45 C.F.R. §46.116 (2022).

226 45 C.F.R. §§ 164.508-.510 (2022).

227 45 C.F.R. §§ 164.302-.318 (2022).

228 45 C.F.R. § 164.506 (2022); *Uses and Disclosures for Treatment, Payment, and Health Care Operations*, U.S. DEP'T HEALTH & HUMAN SERVS., https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/disclosures-treatment-payment-health-care-operations/index.html (last viewed Jul. 26, 2013).

229 45 C.F.R. § 164.512 (2022).

230 *Id.*; 45 C.F.R. § 164.506 (2022).

231 Merida L. Johns, *Privacy and Security of Health Information*, *in* JEROME H. CARTER, ELECTRONIC HEALTH RECORDS: A GUIDE FOR CLINICIANS AND ADMINISTRATORS 298 (2008).

232 45 C.F.R. § 164.502(b) (2022).

minimum necessary requirement, such as disclosures to clinicians for treatment purposes and disclosures required by law.[233]

De-identified data constitute another major carve-out and are entirely exempt from HIPAA coverage.[234] Therefore, they can be disclosed without patient authorization and stored in ways that do not comply with HIPAA Security Rule standards. It is thus possible that healthcare providers will disclose de-identified PROMs to third parties for research, marketing, or other purposes.

In theory, de-identification in compliance with HIPAA instructions thoroughly protects health information. However, there can never be a one-hundred percent guarantee that data will not be re-identified.[235] In some cases, skilled attackers may be able to re-identify data by matching them to publicly available information, such as voter registration records or news stories about individuals with illnesses or injuries.[236]

Sadly, there is also no guarantee that HIPAA-covered data will not be compromised by hacking or other unlawful disclosures due to security lapses. According to one source, "[i]n 2022, an average of 1.94 healthcare data breaches of 500 or more records were reported each day."[237] But data breach risks are not unique to PROMs and are the cost of having so many data-rich medical resources.[238]

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233 45 C.F.R. § 164.502(b)(2) (2022).

234 45 C.F.R. § 160.103 (2022) (defining protected health information as "individually identifiable health information" that is electronically or otherwise transmitted or maintained). The HIPAA Privacy Rule provides detailed guidance regarding de-identification. It states that health information is de-identified if: (1) a qualified expert determines that there is only a "very small" risk that the data can be re-identified, and (2) the expert documents the analysis used to make this determination. 45 C.F.R. § 164.514(b)(1) (2022). As an alternative de-identification method, the HIPAA Privacy Rule lists eighteen items that should be removed to render data anonymized. These include names, geographic information, phone numbers, email addresses, Social Security Numbers, medical record numbers, and more. 45 C.F.R. § 164.514(b)(2)(i) (2022).

235 Victor Janmey & Peter L. Elkin, *Re-Identification Risk in HIPAA De-Identified Datasets: The MVA Attack*, 2018 AMIA ANNU. SYMP. PROC. 1329, 1329 (2018).

236 NAT'L COMM. VITAL & HEALTH STATS., REPORT TO THE SECRETARY OF HEALTH AND HUMAN SERVICES ON ENHANCED PROTECTIONS FOR USES OF HEALTH DATA: A STEWARDSHIP FRAMEWORK FOR "SECONDARY USES" OF ELECTRONICALLY COLLECTED AND TRANSMITTED HEALTH DATA 36 n.16 (2007), https://ncvhs.hhs.gov/wp-content/uploads/2007/12/December-22-2007-Enhanced-Protections-for-Uses-of-Health-Data-A-Stewardship-Framework-for-"Secondary-Uses"-of-Electronically-Collected-and-Transmitted-Health-Data.pdf; Sharona Hoffman & Andy Podgurski, *Balancing Privacy, Autonomy, and Scientific Needs in Electronic Health Records Research*, 65 SMU L. REV 85, 105-07 (2012).

237 *Healthcare Data Breach Statistics*, J. HIPAA, https://www.hipaajournal.com/healthcare-data-breach-statistics/ (last visited Jun. 1, 2023).

238 *See generally* Hoffman & Podgurski, *supra* note 220; *Enforcement Results as of March 31, 2023*, U.S. DEP'T OF HEALTH AND HUM. SERVS., https://www.hhs.gov/hipaa/for-professionals/compliance-enforcement/data/enforcement-highlights/index.html (last visited Apr. 14, 2023).

B. Medical Malpractice

For health care providers, a primary concern is medical malpractice. Both clinicians and health care entities can be held liable for malpractice. PROMs could potentially constitute a liability minefield for the medical community. Claims might arise because clinicians ignore PROMs that could influence important medical decisions, rely on them excessively, or fail to adopt them. This Section considers the malpractice implications of PROMs use.

1. Clinician Liability

Providers that ask patients to complete PROMs but do not review and react appropriately to them could potentially be vulnerable to liability if patients experience adverse events after reporting that their symptoms are not improving or are worsening.[239] For example, clinicians could potentially be sued if patients report suicidal ideation in PROM questionnaires and then, in the absence of intervention, commit suicide.[240]

At the same time, liability could arise from inappropriate reliance on PROMs. To illustrate, psychiatrists may improperly fail to provide aggressive treatment for clinical depression if patients inaccurately score their depression as being low-grade in PROMs. Arguably, had the doctors had thorough face-to-face conversations with such patients, they may have discerned that their problems were more serious than the scores indicated. Similarly, surgeons may decide against needed surgery because patients do not report a high enough level of discomfort in PROMs.[241] In both cases, PROMs should be used as a tool, but fact finders may determine that clinicians should have also conducted other testing or had face-to-face conversations with patients.[242] Recall that patients sometimes experience survey fatigue and fail to answer questions carefully and thoughtfully.[243]

A third possibility is that plaintiffs will bring claims against clinicians who failed to adopt PROMs that would have been helpful to their treatment. For example, PROMs concerning pain or mental health could be critical to medical decision making because these conditions are difficult to assess without patients' subjective input.[244] Patients who feel they were injured because their doctor

239 Rivera et al., *supra* note 10, at 1922 ("If concerning data are not managed appropriately, those data could lead to suboptimal . . . care").

240 *See* NATIONAL QUALITY FORUM, *supra* note 7, at 23.

241 *See* Safran & Higgins, *supra* note 74 (noting that PROMs can inform clinical decisions).

242 *See* Black, *supra* note 183, at 4 ("While some patients will not benefit from surgery, unfortunately they cannot necessarily be identified preoperatively using PROMs.").

243 *See supra* notes 197-200 (discussing survey fatigue).

244 *See supra* notes 46-50, 87 and accompanying text.

failed to solicit their thorough input might sue for negligence.

Medical malpractice plaintiffs suing health care professionals must establish the four elements of a negligence case.[245] These are:

1) The defendant owes a duty of care to the plaintiff;
2) The defendant breached that duty through conduct that fails to meet the applicable standard of care;
3) The plaintiff suffered harm or injury; and
4) There is a causal link between the injury and the breach of duty.[246]

Courts will need to grapple with the novel and complicated question of what the standard of care with respect to PROM use will be. The standard of care in each case is determined through an assessment of whether the defendant exercised "that reasonable degree of skill, knowledge and care ordinarily possessed and exercised by members of their profession under similar circumstances."[247] This assessment generally requires expert testimony.[248] Fact-finders, therefore, should not judge clinicians based on whether they provided *optimal* care, but rather, on whether they provided *reasonably competent* care in light of the particulars of the specific case.[249] The standard of care is to be "objectively determined by reference to the availability of medical and practical knowledge which would be brought to bear in the treatment of like or similar patients under like or similar circumstances by . . . physicians in the same field, given the facilities, resources and options available."[250]

Because PROMs are not yet a routine part of patient care,[251] there is no clear standard of care concerning their use. Whenever emerging technologies begin to

245 Sharona Hoffman & Andy Podgurski, *E-Health Hazards: Provider Liability and Electronic Health Record Systems*, 24 BERKELEY TECH. L. J. 1523, 1533-34 (2009).

246 *Id.* at 1534; McDowell v. Brown, 392 F.3d 1283, 1295 (11th Cir. 2004); Hanson v. Grode, 90 Cal. Rptr. 2d 396, 400 (Cal. Ct. App. 1999).

247 Scott v. C.R. Bard, Inc., 180 Cal. Rptr. 3d 479, 498 (Cal. Ct. App. 2014) (*quoting* Alef v. Alta Bates Hospital, 6 Cal Rptr. 2d 900, 904 (Cal. Ct. App. 1992)); *see also* Day v. Johnson, 255 P.3d 1064, 1069 (Colo. 2011); Neuhaus v. DeCholnoky, 905 A.2d 1135, 1154 (Conn. 2006); LaSalle Bank, N.A. v. C/HCA Dev. Corp., 893 N.E.2d 949, 961 (Ill. App. Ct. 2008); David M. Studdert & Mark A. Hall, *Fundamentals of Health Law: Medical Malpractice Law – Doctrine and Dynamics*, 387 N. ENGL. J. MED. 1533, 1533 (2022). A variety of statutes codify the standard of care and establish a reasonable competence standard. *See, e.g.,* ALA. CODE § 6-5-484 (2020); ARIZ. REV. STAT. § 12-563 (2020); CONN. GEN. STAT. § 52-184c (2020); FLA. STAT. ANN. § 766.102 (2020); GA. CODE ANN. § 51-1-27 (2020); NEB. REV. STAT. ANN. § 44-2810 (2020); N.H. REV. STAT. ANN. § 507-E:2 (2020).

248 *Scott*, 180 Cal. Rptr. 3d 479 at 498-99.

249 *See supra* note 242.

250 Hall v. Hilbun, 466 So.2d 856, 872 (Miss. 1985).

251 *See supra* notes 73-74 and accompanying text (discussing the limited extent to which PROMs have been adopted in the United States).

be adopted, there is uncertainty about the applicable standard of care.[252]

With respect to claims that clinicians ignored information in PROMs, clinicians will likely argue that it is impossible to review and respond to all PROMs[253] and that doing so should not be considered the standard of care. Arguably, instead of assuming that providers are scrutinizing all PROMs, patients who require attention should call the office. According to one study, family physicians have a mean of approximately 2300 patients each,[254] and consequently, reviewing PROMs could be an overwhelming and unmanageable task unless it is largely automated, as suggested later in this Article.[255]

In contrast, patients will posit that there is no point in taking the time to complete PROMs if clinicians simply ignore them. Arguably, requests for PROMs imply that clinicians will read and respond to them.

While there is currently no precedent involving PROMs, a few cases concerning physicians' communication with patients suggest that an argument for PROM-related liability may be viable. In *Gaffney v. Giles*, a Louisiana court of appeals upheld a lower court's determination that a physician's failure to return a patient's phone calls constituted a breach of the standard of care.[256] The patient was awarded damages because his condition deteriorated as he tried and failed to reach his doctor.[257] In an older case, *St. Charles v. Kender*, the court held that an HMO patient who suffered a miscarriage could assert a breach of contract claim against a doctor who ignored her phone calls.[258] By extension, if patients are led to believe that health care providers will review their PROMs, plaintiffs might successfully bring medical malpractice claims based on clinicians' failure to respond to alarming PROM information.

Claims that clinicians did the opposite and relied excessively on PROMs in making diagnostic or treatment decisions and neglected to investigate other indicators would be treated like all claims relating to erroneous medical decision

252 W. Nicholson Price II, *Medical Malpractice and Black-Box Medicine*, *in* BIG DATA, HEALTH LAW, AND BIOETHICS 295, 300 (I. Glenn Cohen, Holly Fernandez Lynch, Effy Vayena & Urs Gasser eds., 2018) (discussing black-box medical algorithms and noting that providers "could be held liable for harmful use of black-box medical algorithms depending on the prevailing customary practice and the extent that custom is considered dispositive."); Amy Jurevic Sokol & Christopher J. Molzen, *The Changing Standard of Care in Medicine*, 23 J. LEG. MED. 449, 469 (2002) ("The variations in acceptance and assimilation of new technology raise important questions about how technology will impact a provider's legal liability where some practitioners utilize it and others do not.").

253 *See supra* notes 205-207 and accompanying text (discussing physician burnout).

254 Mingliang Dai et al., *Scope of Practice and Patient Panel Size of Family Physicians Who Work with Nurse Practitioners or Physician Assistants*, 51 FAM. MED. 311, 314 (2019).

255 *See infra* Part V.A.2.b.

256 165 So. 3d 1100, 1103 (La. App. Ct. 2015).

257 *Id.*

258 646 N.E.2d 411, 413 (Mass. App. Ct. 1995).

making. Courts would need to assess the degree to which reliance on the tool of PROMs to the exclusion of other tools complies with the standard of care.[259]

Interesting questions could also arise with respect to patients who fail to fill out PROM questionnaires or do not answer all questions after being informed that clinicians rely on PROMs for decision making purposes. Would sending reminders to patients or incentivizing survey completion become part of the standard of care? Would courts apply the doctrine of contributory negligence or comparative fault to patients who do not complete PROMs after being told of their importance?[260]

Claims that plaintiffs were injured because physicians failed to implement PROMs and thereby to gather vital information would be assessed in the same manner as claims regarding other new medical technologies. For example, in *Washington v. Washington Hospital Center*, the court ruled that reasonable jurors could find that the standard of care in 1987 required hospitals to use end-tidal carbon dioxide monitors for anesthetized patients during surgery.[261] It thus upheld a jury verdict for a patient who suffered permanent brain injuries because of oxygen deprivation.[262]

It is possible that malpractice concerns will accelerate widespread adoption of PROMs.[263] If courts come to expect that health care providers collect PROMs and integrate them into clinical decision making, providers will be more likely to adopt PROMs quickly to avoid deviating from the standard of care.

Ultimately, the courts will have to determine what the standard of care is in the context of PROMs.[264] If litigation is brought by plaintiffs who feel they were injured and the harm is linked to PROMs, case law will help establish the legal standards for managing this data tool.

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259 *See* George Maliha et al., *Artificial Intelligence and Liability in Medicine: Balancing Safety and Innovation*, 99 MILBANK Q. 629, 632 (2021) (discussing the use of artificial intelligence and machine learning and noting that a "physician who in good faith relies on an AI/ML system to provide recommendations may *still* face liability if the actions the physician takes fall below the standard of care and other elements of medical malpractice are met.").

260 BRIETTA R. CLARK ET AL., LAW AND HEALTH CARE QUALITY, PATIENT SAFETY, AND LIABILITY 223 (9th ed. 2022) (discussing contributory and comparative fault).

261 579 A.2d 177, 183 (D.C. 1990).

262 *Id.* at 177.

263 Ryan Abbott, *The Reasonable Computer: Disrupting the Paradigm of Tort Liability*, 86 GEO. WASH. L. REV. 1, 12 (2018) ("In its quest to reduce accidents, tort law can either accelerate the introduction of new technologies, as was the case with the use of glaucoma testing and pulse oximeters, or it can discourage the use of new technologies, as is usually the case where the standard of care is based on custom.").

264 *See* Sokol & Molzen, *supra* note 252, at 469 ("The reality that the health care industry has not uniformly embraced information technology will cause courts to reexamine the standard of care and how to shape it.")

2. Liability of Health Care Entities

Aggrieved plaintiffs may wish to assert medical malpractice claims not only against clinicians, but also against health care entities. First, plaintiffs can sue health care organizations such as hospitals and clinics for the negligence of their employees, and, under agency principles, employers can be held vicariously liable for their employees' acts.[265] Thus, if courts determine that clinicians can be liable for failing to react appropriately to information captured in PROMs, failing to adopt PROMs, or over-relying on PROMs, patients could use vicarious liability theories to sue health care entities. When clinicians are employees of the entity, plaintiffs can allege actual agency,[266] and if clinicians are independent contractors, claimants may attempt to prove apparent agency.[267]

Alternatively, plaintiffs may wish to sue health care facilities directly if they believe entities have mishandled PROMs, have faulty PROM policies, or do not enforce policies appropriately. The corporate negligence doctrine, which is recognized by most states,[268] establishes that health care entities are liable for failing to provide treatment that meets the standard of care.[269] Hospitals (and other medical entities) have the following four duties:

> (1) a duty to use reasonable care in the maintenance of safe and adequate facilities and equipment; (2) a duty to select and retain only competent physicians; (3) a duty to oversee all persons who practice medicine within its walls as to patient care; and (4) a duty to formulate, adopt and enforce adequate rules and policies to ensure quality care for the patients.[270]

To establish a prima facie case of corporate negligence, plaintiffs must show (1) that the hospital deviated from the standard of care; (2) that the hospital has actual or constructive knowledge of the flaws or procedures that caused the injury; and (3) that a causal link exists between the conduct in question and the

265 CLARK, *supra* note 260, at 231-32.

266 Scott v. SSM Healthcare St. Louis,70 S.W. 3d 560, 566-67 (Mo. Ct. App. 2002).

267 *See* Burless v. West Virginia U. Hosp., Inc., 601 S.E.2d 85, 92-96 (W. Va. 2004). To prevail on a theory of apparent agency, a plaintiff must establish two elements:
(1) The hospital either committed an act that would cause a reasonable person to believe that the physician in question was an agent of the hospital, or, by failing to take an action, created a circumstance that would allow a reasonable person to hold such a belief, and (2) the plaintiff relied on the apparent agency relationship.

268 Erika L. Amarante, *Corporate Liability for Hospitals*, FOR THE DEFENSE 10-11 (Feb. 2016), https://www.wiggin.com/wp-content/uploads/2019/09/34467_ftd-1602-amarante.pdf.

269 Thompson v. Nason Hosp., 591 A.2d 703, 707 (Pa. 1991).

270 *Id.*

harm.[271] Plaintiffs could sue health care organizations for mishandling or neglecting PROMs if they feel that fault lies with the entity itself.

Claims relating to failure to review and respond to PROMs or excessive reliance on PROMs could arguably fall under the duty to oversee personnel properly or to have suitable rules and policies.[272] Failure to implement a PROMs program in the first place (if doing so has become the standard of care) could potentially be considered a breach of the latter duty as well as the duty to maintain adequate equipment.[273]

III. PROM USE IN RESEARCH AND FDA OVERSIGHT

PROMs can serve many purposes outside the clinical setting. They are frequently employed in research studies to obtain quality of life data directly from patients. The FDA has also begun to accept PROMs for certain oversight functions. This section critiques PROM use in research and FDA oversight.

A. Incorporating PROMs into Research

Many researchers are enthusiastic about incorporating PROMs into research.[274] They note that patients have much to contribute in assessing their own symptoms and adverse events and that PROMs are an important adjunct to clinician-reported outcomes.[275] To that end, the National Cancer Institute developed the Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE).[276] The PRO-CTCAE contains "124 items representing 78 symptomatic toxicities" and is designed to be a companion to the physician-reported CTCAE.[277] There is also a pediatric module for self-reporting by minors who are seven to seventeen years old ((Ped-PRO-CTCAE®) and a module for caregivers of minors who cannot self-report (Ped-PRO-CTCAE®[Caregiver]), and all versions are publicly available.[278] PROMs may be particularly useful for comparative effectiveness research in which different

271 Rauch v. Mike-Mayer, 783 A.2d 815, 827 (Pa. Super. Ct. 2001).

272 *Thompson*, 591 A.2d at 707.

273 *Id.*

274 Kluetz et al., *supra* note 87, at 743.

275 *Id.* at 743.

276 *Id.*; *What is the PRO-CTCAE Measurement System?*, NAT'L CANCER INSTITUTE DIV. CANCER CONTROL & POPULATION SCIENCES, https://healthcaredelivery.cancer.gov/pro-ctcae/overview.html (last updated Jan. 28, 2022) [hereinafter NCI].

277 NCI, *supra* note 276; *Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE®)*, NAT'L CANCER INSTITUTE DIV. CANCER CONTROL & POPULATION SCIENCES https://healthcaredelivery.cancer.gov/pro-ctcae/ (last updated Jan. 28, 2022).

278 NCI, *supra* note 276.

medical interventions are directly compared to determine which are of greatest benefits or harm to particular patients.[279]

Nevertheless, some experts are highly critical of the way PROMs are currently used in research.[280] According to one article, thousands of new PROM questionnaires are produced, many of which are used for only one study, and they have little impact on medical research.[281] The authors note that while PROMs are very widely employed in studies, their results are rarely reported in publications, and when they are discussed, there is often no comparison of score changes between study arms.[282] This article is not alone in noting that PROM data are often neglected in research publications.[283]

Others express additional concerns. One international consortium developed recommendations for identifying suitable statistical methods for PROM analysis, managing missing data, and other challenges. [284] However, it noted that there is "no consensus on standards and unclear guidelines on how to analyse and interpret PRO data" collected in cancer clinical trials.[285] It concluded that it is critical that robust findings "be derived consistently across studies to yield meaningful results" and that a great deal of work has yet to be done to finetune PROM standards for cancer studies.[286]

B. PROM Use in FDA Drug and Device Assessment and Labeling

At their best, patients' own voices, expressed through PROMs, can play a vital role in research and regulatory oversight. PROMs are increasingly used for FDA regulatory purposes.[287] The 21st Century Cures Act established a program

279 Hostetter & Klein, *supra* note 14; Albert W. Wu et al., *Adding the Patient Perspective to Comparative Effectiveness Research*, 29 HEALTH AFFS. 1863, 1863 (2010).

280 Stephen P. McKenna et al., *Measurement of Patient-Reported Outcomes. 1: The Search for the Holy Grail*, 22 J. MED. ECON. 516, 520 (2019).

281 *Id.*

282 *Id.*

283 Rivera et al., *supra* note 10, at 1911 ("A 2019 evaluation of 160 cancer trials showed nearly 50,000 participants were included in studies that failed to publish their PRO data"); Thi Xuan Mai et al., *Utility of the Patient-Reported Outcomes Measurement Information System (PROMIS) to Measure Primary Health Outcomes in Cancer Patients: A Systematic Review*, 29 SUPPORTIVE CARE CANCER 1723, 1736 (2021) ("Non-reporting of PRO results is prevalent, and this devalues the considerable contribution of participants who spend time and effort to provide their PRO information.").

284 Carneel Coens et al., *International Standards for the Analysis of Quality-of-Life and Patient-Reported Outcome Endpoints in Cancer Randomised Controlled Trials: Recommendations of the SISAQOL Consortium*, 21 LANCET e83, e83 (2020).

285 *Id.*

286 *Id.* at e94.

287 U.S. FOOD & DRUG ADMIN., VALUE AND USE OF PATIENT-REPORTED OUTCOMES (PROS) IN ASSESSING EFFECTS OF MEDICAL DEVICES CDRH STRATEGIC PRIORITIES 2016-2017, at 5 (2017), https://www.fda.gov/media/109626/download.

under which the FDA is to evaluate the use of real world evidence to support new uses of approved drugs and to help conduct post approval studies.[288] The Act defines "real world evidence" as "data regarding the usage, or the potential benefits or risks, of a drug derived from sources other than traditional clinical trials."[289] This data includes information that is generated by patients themselves.[290]

In 2022 guidance regarding medical devices, the FDA stated that use of patient-reported outcomes (PROs) is voluntary, and thus they are not currently *required* for any FDA purpose.[291] However, the FDA supports and recommends PROMs in many circumstances.[292]

Under the Medical Device Development Tools program, PROMs qualify for use in the development and assessment of medical devices.[293] PROM-based research can be valuable for purposes of designing and developing devices that will best serve patient needs.[294] In addition, PROMs can significantly contribute to post market surveillance, providing data about treatment success or failure after products are deployed in clinical care.[295]

If developers wish to use PROMs to meet regulatory requirements such as medical device evaluation, the FDA will determine what validity evidence is needed to render them "fit-for-purpose."[296] In addition, the FDA runs the Clinical

288 21 U.S.C. § 355g (2018).

289 21 U.S.C. S 355g(b) (2018).

290 *Real-World Evidence*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/science-research/science-and-research-special-topics/real-world-evidence(last viewed Oct. 19, 2022) (noting that "real-world data" can include data gathered from digital health technologies, which could include PROMs data).

291 U.S. FOOD & DRUG ADMIN., PRINCIPLES FOR SELECTING, DEVELOPING, MODIFYING, AND ADAPTING PATIENT REPORTED OUTCOME INSTRUMENTS FOR USE IN MEDICAL DEVICE EVALUATION 2 (2022), https://www.fda.gov/media/141565/download [hereinafter FDA 2022].

292 *Id.*

293 *Id.* at 3; *Medical Device Development Tools (MDDT)*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/medical-devices/science-and-research-medical-devices/medical-device-development-tools-mddt (last viewed Nov. 28, 2022).

294 FDA 2022, *supra* note 291, at 3-4.

295 *Id.* The FDA acknowledges that not all side effects of drugs and devices can be discerned "based on preapproval studies involving only several hundred to several thousand patients." Consequently, it has post marketing surveillance and risk assessment programs designed to identify adverse events that did not manifest before a drug or device was approved. *Postmarket Surveillance Programs*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/drugs/surveillance/postmarketing-surveillance-programs (last visited Apr. 20, 2020).

296 FDA 2022, *supra* note 291, at 4-5 ("By assessing the similarities and differences between the population in the clinical study and in the development of the PRO instrument, FDA can determine whether the PRO instrument is fit-for-purpose."). "Fit-for-Purpose" is defined as a "conclusion that the level of validation associated with a medical product development tool is sufficient to support its context of use." *Id.* at 12.

Outcome Assessment (COA) Qualification Program.[297] The FDA explains that "COA qualification represents a conclusion that within the stated context of use, results of assessment can be relied upon to measure a specific concept and have a specific interpretation and application in drug development and regulatory decision-making."[298]

There is no consensus as to which PROMs should be used for FDA approval.[299] The FDA offers several key principles that should guide incorporation of PROMs into device evaluation. They are:

1. Establish and define the concept of interest (COI) the PRO instrument is intended to capture;
2. Clearly identify the role of the PRO (e.g., primary, secondary, ancillary, effectiveness, safety) in the clinical study protocol and statistical analysis plan;
3. Provide evidence showing that the PRO instrument reliably assesses the COI; and
4. Effectively and appropriately communicate the PRO-related results in the [product] labeling to inform healthcare provider and patient decision making.[300]

Drug and device "labeling" includes not only labels pasted on containers, but also other written, printed, or graphic material on items, their containers, wrappers, or other matter that accompany them.[301] In 2009 the FDA issued guidance that describes how the FDA reviews and assesses PROM instruments that are used to develop evidence for claims in medical product labeling.[302] According to one source, approximately twenty-six percent of new drugs approved from 2016 to 2020 included PRO-related statements in labeling.[303]

The FDA is developing further guidance regarding PROM use. These include draft guidance on "Core Patient-Reported Outcomes in Cancer Clinical Trials"[304] and a "Patient-Focused Drug Development Guidance Series for

297 *Clinical Outcome Assessment (COA) Qualification Program*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/drugs/drug-development-tool-ddt-qualification-programs/clinical-outcome-assessment-coa-qualification-program (last visited Nov. 9, 2021).

298 *Id.*

299 Warsame & D'Souza, *supra* note 19, at 2291.

300 FDA 2022, *supra* note 291,at 4.

301 21 U.S.C. §321(m) (2018).

302 U.S. FOOD & DRUG ADMIN., GUIDANCE FOR INDUSTRY PATIENT-REPORTED OUTCOME MEASURES: USE IN MEDICAL PRODUCT DEVELOPMENT TO SUPPORT LABELING CLAIMS (2009), https://www.fda.gov/media/77832/download.

303 Gnanasakthy et al., *supra* note 12, at 650.

304 U.S. FOOD & DRUG ADMIN., CORE PATIENT-REPORTED OUTCOMES IN CANCER CLINICAL TRIALS: GUIDANCE FOR INDUSTRY, DRAFT GUIDANCE (June 2021), https://www.fda.gov/media/149994/download.

Enhancing the Incorporation of the Patient's Voice in Medical Product Development and Regulatory Decision Making."[305] Consequently, it is not inconceivable that the FDA will ultimately require PROM use for some regulatory purposes once it refines its approach to this tool.

IV. PROM USE FOR PERFORMANCE MEASUREMENT AND INSURANCE COVERAGE

Policy makers in the U.S. have long expressed a commitment to achieving value-based care that rewards health care providers for high-quality services and outcome improvements.[306] Such a system requires the ability to measure quality of care and health outcomes accurately, and, according to some advocates, PROMs are a critical component of these measurements.[307] Thus, the concept of patient-reported outcome performance measures (PRO-PM) has emerged.[308] A PRO-PM is a "performance measure that is based on patient-reported outcomes assessed through data, often collected through a PROM and then aggregated for . . . [a] healthcare entity."[309] CMS endorses the use of PRO-PMs for performance improvement and accountability purposes.[310]

Under the CMS Quality Payment Program (QPP), created by the Medicare Access and CHIP Reauthorization Act of 2015,[311] CMS rewards clinicians for high performance levels and reduces payments for sub-standard performance.[312] Clinicians have two QPP options: 1) the Merit-based Incentive Payment System (MIPS) or 2) Advanced Alternative Payment Models. PROMs are a priority measurement category for MIPS.[313] Furthermore, CMS is incorporating PRO-

305 *Patient-Focused Drug Development Guidance Series for Enhancing the Incorporation of the Patient's Voice in Medical Product Development and Regulatory Decision Making*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/drugs/development-approval-process-drugs/fda-patient-focused-drug-development-guidance-series-enhancing-incorporation-patients-voice-medical (last visited Nov. 22, 2022).

306 David Lansky, *Reimagining a Quality Information system for US Health Care*, HEALTH AFFS. FOREFRONT (Jan. 25, 2022), https://www.healthaffairs.org/do/10.1377/forefront.20220120.301087/.

307 *Id.*

308 NATIONAL QUALITY FORUM, *supra* note 7, at 3.

309 *Id.*

310 *Id. at 4.*

311 Pub. L. No. 114-10, 129 Stat. 87 (2015) (codified as amended in scattered sections of 16, 26, and 42 U.S.C.). CHIP is the Children's Health Insurance Program. *See The Children's Health Insurance Program (CHIP)*, HEALTHCARE.GOV, https://www.healthcare.gov/medicaid-chip/childrens-health-insurance-program/ (last visited Dec. 11, 2022).

312 *Quality Payment Program Overview*, DEPARTMENT OF HEALTH AND HUMAN SERVICES, https://qpp.cms.gov/about/qpp-overview (last visited Dec. 11, 2022).

313 *MACRA*, CENTERS FOR MEDICARE & MEDICAID SERVS., https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-

PMs into its Meaningful Measures 2.0 initiative, which aims to streamline quality measures and "promote innovation and modernization of all aspects of quality."[314] Additionally, CMS and the National Quality Forum have undertaken an initiative called "Building a Roadmap from Patient-Reported Outcome Measures to Patient-Reported Outcome Performance Measures."[315] The project aims to provide guidance regarding PRO-PMs that will be used in CMS accountability programs such as alternative payment models and was scheduled for completion in late 2022.[316] To date, however, PRO-PMs have constituted only five percent of the measures that were used by federal programs and endorsed by the National Quality Forum.[317]

Private insurers have used PROMs as well.[318] In 2013, Blue Cross Blue Shield of Massachusetts (BCBSMA) and providers participating in its Alternative Quality Contract (AQC) program[319] collaboratively selected conditions for initial PROM implementation.[320] The chosen conditions were depression and knee/hip pain, which had well-recognized, validated PROMs.[321] BCBSMA paid providers to participate in the PROM program, and, during 2013-2015 participation was voluntary.[322] In 2016, BCBSMA transitioned to requiring participation from AQC providers, expanded the number of conditions for PROM adoption, and continued to pay providers for participation.[323] It did not

MIPS-and-APMs/MACRA-MIPS-and-APMs (last visited Apr. 1, 2022); *Merit-Based Incentive Payment System (MIPS)*, CODE TECH., https://www.codetechnology.com/mips/ (last visited Dec. 11, 2022); NATIONAL QUALITY FORUM, *supra* note 7, at 23.

314 *Meaningful Measures 2.0: Moving from Measure Reduction to Modernization*, CENTERS FOR MEDICARE & MEDICAID SERVS., https://www.cms.gov/medicare/meaningful-measures-framework/meaningful-measures-20-moving-measure-reduction-modernization (last modified June 17, 2022).

315 *Building a Roadmap from Patient-Reported Outcome Measures to Patient-Reported Outcome Performance Measures*, NAT'L QUALITY F., https://www.qualityforum.org/ProjectDescription.aspx?projectID=93898 (last visited Dec. 11, 2022).

316 *Id.*

317 Amir Qaseem et al., *Recommending Caution in Patient-Reported Outcome-Based Performance Measurement*, 174 ANNALS INTERNAL MED. 1161, 1161 (2021).

318 Neubert et al., *supra* note 17, at 1-2 ("The breadth to which insurers use patient-reported data in their business models varies greatly.").

319 The Alternative Quality Contract is "an innovative global payment model that uses a budget-based methodology, which combines a fixed per-patient payment (adjusted annually for health status and inflation) with substantial performance incentive payments (tied to the latest nationally accepted measures of quality, effectiveness, and patient experience)." *Blue Cross Blue Shield Massachusetts - Alternative Quality Contract Statewide*, PRIMARY CARE COLLABORATIVE, https://www.pcpcc.org/initiative/blue-cross-blue-shield-massachusetts-alternative-quality-contract (last updated March 2019).

320 MASS. MED. SOC., *supra* note 19, at 5; Safran & Higgins, *supra* note 74.

321 *Id.*

322 Safran & Higgins, *supra* note 74.

323 *Id.* The expanded set of conditions included "low back pain, prostate cancer, other cancers with active treatment, and coronary artery disease."

make any payment adjustments based on performance as reflected in PROM scores so that clinicians would not be concerned that participation could lead to financial penalties.[324] BCBSMA plans to roll out its PROM program in three phases: 1) paying providers for PROM adoption, data sharing, and learning; 2) using collected data to inform clinical decision making; and 3) eventually, using collected data to adjust payment for performance outcomes and promote accountability.[325] Some insurers may also use PROMs to determine which physicians should be included in their networks.[326]

As noted earlier, advocates argue that validated PROMs that are implemented correctly can have a positive impact on clinical decision making and cost savings, which would also benefit health care payers.[327] For example, BCBSMA found that patients whose PROMs indicated that they were high functioning at baseline (approximately eight percent of its cohort) did not benefit from hip and knee replacement surgery and could feel worse because of the procedure.[328] Thus, PROM assessment could spare some patients from undergoing a painful and expensive surgery and recovery period at the same time that it spares insurers from paying for unnecessary procedures.[329]

Other commentators caution against use of PROMs for insurance purposes at this time.[330] The American College of Physicians (ACP) asserts that more data are needed to establish that PRO-PMs in truth enhance quality of care and can be used to compare clinician performance accurately.[331] The ACP notes that outcomes can be affected by factors that are out of the physicians' control, such as patient compliance with treatment protocols or access to family and other support systems.[332] Moreover, some physicians could wrongly be penalized because they treat very sick patients or members of vulnerable communities whose outcomes are likely to be suboptimal even if they receive excellent care.[333] The Special Needs Plan Alliance studied use of the Medicare Health Outcome Survey and found that it was problematic for special needs plans because "they serve diverse, low-income, disabled, and chronic care, complex, or advanced-

324 *Id.*

325 MASS. MED. SOC., *supra* note 19, at 6.

326 Neubert et al., *supra* note 17, at 7.

327 *Id.* at 5 (noting that preliminary European studies show that "PROMs do support more evidence-based decision-making and value-based care delivery"); *see supra* Part I.B.

328 Safran & Higgins, *supra* note 74.

329 *Id.*

330 Qaseem et al., *supra* note 317, at 1161.

331 *Id.* at 1161; *see also* Holmes et al., *supra* note 44, at 254 ("There is no definitive evidence as to whether PROMs have an impact on health status, with only some studies showing significant differences.").

332 Qaseem et al., *supra* note 317, at 1161.

333 *Id.*

illness populations."[334] Skilled analysts would need to adjust for such factors.

The Massachusetts Medical Society warns against unintended consequences of using PROMs for performance measurement purposes.[335] If reimbursement were to depend on PROM scores, some medical decisions might be driven by health care providers' desire to maximize their earnings, and such decisions may not always be in patients' best interest.[336] Thus, clinicians may opt for the least uncomfortable diagnostic tests so that patients do not report increased anxiety or pain, even if more uncomfortable tests may have been better diagnostic tools. This is not merely a hypothetical concern, as clinicians frequently respond to incentives despite adverse effects on patient care.[337] For example, a United Kingdom initiative that linked financial rewards to swift access to care may have eroded continuity of care, which is important for many patients with complex needs.[338] Health care organizations were incentivized to furnish access to any provider as quickly as possible, so patients were given appointments with clinicians who knew nothing about them.[339]

PROMs require extensive validation, and their use requires sound risk adjustment strategies.[340] PROM programs that are poorly implemented by insurers could penalize clinicians that are providing the best care possible under the circumstances. They could also deprive patients of needed treatments because of erroneous PROM-based assumptions about their functionality or discomfort.[341] Both the ACP and the Massachusetts Medical Society caution that it is premature to rely on PROMs for insurance purposes.[342]

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334 Deborah Paone, *Special Needs Plans under Medicare Advantage Quality Measurement: A Focused Look at the Medicare Health Outcomes Survey (HOS)* 1 (Dec. 2018), https://www.snpalliance.org/wp-content/uploads/2020/04/snpa-paone-hos-white-paper-final-dec-2018-1.pdf. See *supra* notes 63-72 for discussion of the Medicare Health Outcomes Survey.

335 MASS. MED. SOC., *supra* note 19, at 9.

336 *Id.*

337 Diane Alexander, *How Do Doctors Respond to Incentives? Unintended Consequences of Paying Doctors to Reduce Costs*, 128 J. POL. ECON. 4046, 4046 (2020).

338 MASS. MED. SOC., *supra* note 19, at 8.

339 *Id.*

340 Qaseem et al., *supra* note 317, at 1161-62. *See also supra* notes 342-344 and accompanying text (discussing validation). Risk adjustment can be defined as "A statistical process that takes into account the underlying health status and health spending of the enrollees in an insurance plan when looking at their health care outcomes or health care costs." *Risk Adjustment*, HEALTHCARE.GOV, https://www.healthcare.gov/glossary/risk-adjustment/ (last visited Dec. 11, 2022).

341 *See* Black et al., *supra* note 183, at 3 (cautioning against using PROMs to crudely ration care and relating that UK PROM data was "misinterpreted as showing that 20,000 hernia and varicose vein operations and 16,000 hip and knee replacements each year should not take place.").

342 MASS. MED. SOC., *supra* note 19, at 10 ("[S]ince PROMs implementation remains in its infancy . . . PROMs results should not be used to compare providers or outcomes for payment"); Qaseem et al., *supra* note 317, at 1162 (advising caution "until PRO-PMs are developed in a rigorous manner and physicians can seamlessly integrate patient-reported data collection into

V. RECOMMENDATIONS

In an ideal world, physicians or other skilled clinicians would have ample time to speak with patients about their symptoms, complaints, and medical progress. But medicine is all too often a profit-driven industry, pressuring providers to limit the duration of patient encounters and pack their schedules.[343] In light of these realities, PROMs can potentially fill important data gaps.[344] But much work remains to be done to address considerable PROM deficiencies and concerns that can lead to liability. Whether these shortcomings can be consistently overcome is still in question. This part formulates recommendations for technical and administrative improvements as well as legal and policy interventions. As PROM programs are increasingly adopted by health care providers and regulators,[345] it is vital to ensure that they are appropriately implemented and do not have unintended adverse consequences for patients and clinicians.

A. Technical and Administrative Recommendations

Many experts have offered recommendations to assist health care providers and researchers in establishing PROM programs.[346] Thoughtful selection and implementation of PROMs by qualified experts should provide a degree of protection against liability risks and render PROMs better fit for research, use by the FDA and CMS, and other purposes.

1. PROM Selection

Selecting appropriate PROMs for inclusion in questionnaires can be very challenging and is vital to the effectiveness of any PROM initiative. Hundreds of potentially relevant PROMs are often available, and their quality may be difficult to discern.[347] Those tasked with PROM selection (called "implementers" below) must carefully contemplate what they hope to achieve, including what specific information they wish to gather and how it will be used.[348] PROM selection

practice.").

343 Hoffman, *supra* note 88, at 87-92.

344 *See supra* Part I.B (discussing PROM benefits).

345 Danny Mou et al., *Impetus of US Hospital Leaders to Invest in Patient-Reported Outcome Measures (PROMs): A Qualitative Study*, 12 BMJ OPEN 1 (2022) ("[H]ospital leaders feel a strong moral imperative to collect PROMs [which] can be used to demonstrate the value of their services to payors and patients); *supra* Parts III and IV.

346 *See, e.g.,* Al Sayah et al., *supra* note 20, at 3-4; MASS. MED. SOC., *supra* note 19; NATIONAL QUALITY FORUM, *supra* note 7, at 5-23; Rivera et al., *supra* note 10.

347 Churruca et al., *supra* note 145, at 1021.

348 Churruca et al., *supra* note 145, at 1021.

requires a literature review and thorough research.[349] Below are several key components of a successful selection process.

a. Obtain Stakeholder Input

PROMs selection requires input from diverse stakeholders.[350] These can include clinicians, patients, computer system administrators, technical experts, family members, caregivers, and others.[351] It may be prudent to establish a formal selection committee to ensure that such input is obtained.[352] It is particularly important to engage with patients to determine whether they will view PROMs favorably.[353] Patients should be asked whether they find proposed PROMs to be accessible, understandable, or offensive in any way.[354]Additionally, academic and industry researchers should continue to examine how PROMs can best respond to patient needs, abilities, and preferences.[355]

b. Select PROMs that Align with Goals

Implementers should identify the "focus, scope, and type" of PROMs that will support both treatment of individual patients and institutional goals.[356] For example, a key decision is whether to use generic PROMs, condition-specific PROMs, or a combination of both.[357] PROM selection should be informed by a clear understanding of what outcomes clinicians or researchers wish to measure.[358] Institutional goals might include performance evaluation, health care

349 NATIONAL QUALITY FORUM, *supra* note 7, at 7.

350 Sivan et al., *supra* note 35, at 1.

351 Al Sayah et al., *supra* note 20, at 3; NATIONAL QUALITY FORUM, *supra* note 7, at 9.

352 Al Sayah et al., *supra* note 20, at 3.

353 *Id.* at 102; CMS 2022, *supra* note 6, at 7; Rivera et al., *supra* note 10, at 1915 (discussing the need for patient input regarding PROMs that will be used in research).

354 Al Sayah et al., *supra* note 20, at 4.

355 San Keller et al., *Selecting Patient-Reported Outcome Measures to Contribute to Primary Care Performance Measurement: A Mixed Methods Approach*, 35 J GEN. INTERNAL MED. 2687, 2694 (2020) (discussing the need for future research); Brocha Z. Stern, *Clinical Potential of Patient-Reported Outcome Measures in Occupational Therapy*, 76 AM. J. OCCUPATIONAL THERAPY 1 (2022) ("Looking forward, clinicians should collaborate with multiple stakeholders, from patients to health system leaders, to meaningfully and equitably integrate PROMs into routine clinical care. Researchers should evaluate best practices for selecting, interpreting, implementing, and applying PROMs to maximize both individual-level and aggregate-level value.").

356 *Id.* at 3.

357 Churruca et al., *supra* note 145, at 1021. *See also supra* notes 161-163and accompanying text (discussing generic and condition-specific PROMs).

358 NATIONAL QUALITY FORUM, *supra* note 7, at 10; Rivera et al., *supra* note 10, at 1913 (discussing the importance of clear research questions, rationales for PROM assessment, objectives, and hypotheses).

delivery improvements, and treatment cost analyses.

c. Select PROMs that Meet Practical Needs

Practical considerations are of vital importance.[359] PROM questions should be written in clear, accessible language, and for some patient populations, multiple languages will be needed.[360] Some practices or research projects include many patients with cognitive decline and, to the extent possible, their PROM queries should be appropriate for such patients.[361]

In addition, patients may have limited attention spans and tolerance for answering queries or may have impairments that hinder their response abilities, so PROM questionnaires must not be excessively lengthy.[362] Computer adaptive technology can be helpful in limiting patient burden because it tailors questionnaires to particular patients based on their responses.[363] For example, to avoid survey fatigue, PROMIS often limits the number of queries to four to six when computer adaptive technology is used.[364] However, implementers must also ensure that thoroughness is not sacrificed for the sake of brevity.

Another practical consideration is cost. Implementers must determine whether PROMs will strain their budget and may opt for PROMs that are publicly available rather than those that require licensing fees.[365]

d. Evaluate PROM Attributes Prior to Selection

Implementers must examine the psychometric properties of proposed PROMs.[366] Implementers should look for evidence of reliability, validity, responsiveness, interpretability, and appropriateness for particular patient

359 Al Sayah et al., *supra* note 20, at 3.

360 NATIONAL QUALITY FORUM, *supra* note 7, at 10; Rivera et al., *supra* note 10, at 1914-15 (discussing barriers to PROM completion in research).

361 *See* Kramer & Schwartz, *supra* note 179, at 1708-12 (discussing "PRO design features to optimize cognitive Accessibility").

362 *See supra* notes 197-200 and accompanying text (discussing survey fatigue).

363 *See supra* notes 76-78and accompanying text.

364 *What is PROMIS*, PROMIS HEALTH ORG., https://www.promishealth.org/57461-2/#:~:text=PROMIS%20measures%20have%20been%20developed,precision%20than%20most%20conventional%20measures (last visited Dec. 11, 2022).

365 Al Sayah et al., *supra* note 20, at 3; NATIONAL QUALITY FORUM, *supra* note 7, at 10.

366 NATIONAL QUALITY FORUM, *supra* note 7, at 10. Psychometric properties "provide information about a test's appropriateness, meaningfulness, and usefulness—in other words, its validity." *Psychometric Properties*, PSYCH., http://psychology.iresearchnet.com/counseling-psychology/personality-assessment/psychometric-properties/ (last visited Dec. 11, 2022).

populations and diseases.[367] To that end, PROMs endorsed by PROMIS are often a good choice.[368] In addition, implementers should verify that selected PROMs have been used successfully by other entities in similar circumstances.[369] Further guidance for PROM review is found in a variety of resources, two of which are the "COSMIN Guideline for Systematic Reviews of Patient-Reported Outcome Measures"[370] and the Terwee criteria for measurement properties of health status questionnaires.[371]

e. Conduct a Pilot Program

Prior to full-scale launch of PROMs, implementers should conduct a pilot program to identify any pitfalls that were missed during the selection process.[372] The pilot program should evaluate how easily PROMs can be integrated into clinical workflow and how well they serve their intended purposes.[373]

2. PROM Implementation

Implementing PROMs can be no less challenging than selecting them. The following are several essential components of the implementation process.

a. Cultivate Stakeholder Buy-In

Implementers should build enthusiasm for PROMs among all stakeholders, including providers, staff, patients, and technical experts.[374] It is particularly important to have one or more clinician champions to promote appreciation of

367 Al Sayah et al., *supra* note 20, at 4; Basch et al., *supra* note 165, at 500-01. *See supra* Parts I.C.1.a and 1.C.1.e for a discussion of reliability, validity, responsiveness, and interpretability.

368 Evans et al., *supra* note 59, at 350 (noting that PROMIS is the gold-standard for PROMs); MASS. MED. SOC., *supra* note 19, at 6; Wong & Meeker, *supra* note 83, at 1 (finding that PROMIS physical health computerized adaptive test domains "are reliable, responsive, and interpretable in most contexts of patient care throughout all orthopaedic surgery subspecialties.").

369 Basch et al., *supra* note 165, at 500; NATIONAL QUALITY FORUM, *supra* note 7, at 9.

370 C. A. C. Prinsen et al., *COSMIN Guideline for Systematic Reviews of Patient-Reported Outcome Measures*, 27 QUALITY LIFE RSCH. 1147, 1148-56 (2018).

371 Caroline B. Terwee et al., *Quality Criteria Were Proposed for Measurement Properties of Health Status Questionnaires*, 60 J. CLINICAL EPIDEMIOLOGY 34, 34-41 (2007); *see also* Eric K. H. Chan et al., *Implementing Patient-Reported Outcome Measures in Clinical Practice: A Companion Guide to the ISOQOL User's Guide*, 28 QUALITY OF LIFE RSCH. 621, 624 (2019) (listing other resources).

372 Al Sayah et al., *supra* note 20, at 4; CMS 2022, *supra* note 6, at 6.

373 Al Sayah et al., *supra* note 20, at 4 ("It is important to test these tools with the population on which the measure focuses.").

374 NATIONAL QUALITY FORUM, *supra* note 7, at 14.

PROMs' benefits and acceptance of the program.[375]

b. Minimize Burdens Associated with PROMs

PROM completion should be minimally burdensome for patients.[376] To that end, implementers might provide patients with options, such as using either a tablet computer or a patient portal and completing PROMs either at the clinical visit or at home.[377] Implementers should also be mindful of the frequency of PROM administration to avoid redundant and unnecessary data collection.[378] Thus, administration frequency should be included in PROM specifications. The value of PROMs should be explained to patients, and clinicians should demonstrate their usefulness by referring to patients' PROM scores during visits.[379]

Health care organizations should also ensure that PROMs are not excessively cumbersome for clinicians.[380] Staff members should be tasked with the work of educating patients about PROMs, asking them to complete PROMs, and sending reminders if necessary.[381]

Initial PROM review could be assigned to someone other than the physician. Trusted nurses or other clinicians could read completed PROM questionnaires and create short summaries for physicians. They would then alert doctors to any responses that require special attention.

c. Harness Artificial Intelligence

Potentially, an even better approach is to automate PROM review using artificial intelligence (AI). AI algorithms can analyze vast amounts of information and make decisions based on the data.[382] AI could assess each patient's PROMs, provide physicians with very brief summaries, and alert clinicians to any alarming data that should not be ignored. The alert could appear prominently on the opening screen of the patient's EHR.

375 *Id.* at 14-15; MASS. MED. SOC., *supra* note 19, at 7.

376 MASS. MED. SOC., *supra* note 19, at 7; NATIONAL QUALITY FORUM, *supra* note 7, at 16.

377 NATIONAL QUALITY FORUM, *supra* note 7, at 16.

378 *Id.* at 10.

379 *Id.* at 17; MASS. MED. SOC., *supra* note 19, at 7.

380 NATIONAL QUALITY FORUM, *supra* note 7, at 17.

381 *Id.*

382 Darrell M. West & John R. Allen, *How Artificial Intelligence Is Transforming the World*, BROOKINGS (Apr. 24, 2018), https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/.

Furthermore, AI could discern patterns.[383] It could highlight responses or trends in responses that indicate the failure of treatment or worsening of the patient's condition. It could also identify patterns of responses that are characteristic of particular conditions that the patient might have.

d. Adopt Strategies for PROM Interpretation, Risk Adjustment, and Missing Data

In the clinical setting, physicians must be able to understand PROM scores and know how to respond to them.[384] They must be able to determine whether score changes over time are clinically meaningful and actionable.[385] Implementers should ensure that educational materials are available to train clinicians with respect to PROM interpretation.[386]

If PROMs will be used for nonclinical purposes, such as performance measurement, research, or quality improvement, a proper analysis plan must be in place.[387] This includes statistical adjustment for problems such as response bias and nonresponders as well as mechanisms to address missing data.[388] For example, to compensate for missing data, analysts may collect auxiliary information that is associated with the patient-reported outcome in question (e.g., diagnostic test results) or use statistical machine learning techniques to make adjustments.[389] The process of estimating missing data based on known data points is called imputation.[390]

e. Incorporate PROMs data into EHR Systems

To be optimally useful in clinical practice, PROMs data should be incorporated into EHR systems.[391] Such integration helps physicians use PROMs

383 *Id.*

384 NATIONAL QUALITY FORUM, *supra* note 7, at 20.

385 *Id.*

386 *Id.*

387 Basch et al., *supra* note 165, at 500.

388 *Id.*; Rivera et al., *supra* note 10, at 1916 (discussing methods to minimize missing data in research studies, such as reminders and notifications to participants). *See supra* note 342 and accompanying text for discussion of risk adjustment. *See supra* notes 150-152for discussion of response bias and notes 142-153 and accompanying text for discussion of missing data and nonresponders.

389 Ayilara et al., *supra* note 165, at 107; *see also* CELLA ET AL., *supra* note 37, at 35-36 (discussing "statistical methods of adjustment").

390 Jonathan A. C. Sterne et al., *Multiple Imputation for Missing Data in Epidemiological and Clinical Research: Potential and Pitfalls*, 338 BMJ b2393 (2009).

391 CELLA ET AL., *supra* note 37, at 52-54; NATIONAL QUALITY FORUM, *supra* note 7, at 21-22; *see also supra* notes 79-83 (discussing integration of PROMs into EHRs).

because they can view them when checking other information in patients' records. It also facilitates PROM use in research and quality improvement initiatives that will utilize EHRs. PROM developers should adopt user-centered design approaches[392] so that PROM scores are easy to access, read, and understand.[393]

B. Legal and Policy Interventions

The legal and policy communities can employ several strategies to facilitate PROM implementation and address its legal implications. Key areas of focus are enhancing privacy protections, addressing medical malpractice concerns, and considering financial incentives for PROM adoption.

1. Privacy

PROMs can include a plethora of data about deeply private matters.[394] A search of the PROMIS database reveals that a very large number of the featured PROMs relate to depression, anxiety, ability to participate in activities, alcohol use, irritability, relationships, positive affect, stress, self-efficacy, sexual functioning and satisfaction, and other sensitive attributes.[395] Routine inclusion of such patient-provided information in EHRs raises acute privacy concerns.

In response, the HIPAA Privacy Rule's minimum necessary provision should be modified.[396] Entities that request patient records and are entitled to receive them because of patient consent or a HIPAA exception should not automatically receive PROMs. Instead, PROMs should be disclosed to requesters only if they have asked for them specifically and explained why they need them. Covered entities should be empowered to assess justifications for PROM requests to approve or deny them just as they already are tasked with determining what constitutes the minimum necessary response for all requests.[397] These

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392 *User-Centered Design Basics*, USABILITY, https://www.usability.gov/what-and-why/user-centered-design.html (last visited Apr. 22, 2023) ("[User-centered design] is based upon an explicit understanding of users, tasks, and environments; is driven and refined by user-centered evaluation; and addresses the whole user experience.").

393 NATIONAL QUALITY FORUM, *supra* note 7, at 22.

394 *See, e.g.,* Rasa Ruseckaite et al., *Evaluation of the Acceptability of Patient-Reported Outcome Measures in Women Following Pelvic Floor Procedures*, 31 QUALITY LIFE RSCH. 2213, 2214, 2217 (2022).

395 View Measures, *supra* note 57.

396 45 C.F.R. § 164.502(b) (2022); *see supra* notes 396-397and accompanying text.

397 *Minimum Necessary Requirement*, U.S. DEP'T HEALTH & HUM. SERVS. https://www.hhs.gov/hipaa/forprofessionals/privacy/guidance/minimumnecessaryrequirement/index.html (last viewed Jul. 26, 2013) ("For non-routine disclosures and requests, covered entities must develop reasonable criteria for determining and limiting the disclosure or request to only the

assessments should be carefully conducted by experts such as privacy officers so that disclosures are not simply rubberstamped. PROMs should be stored in EHRs in ways that make them easy to identify and withhold when other data are disclosed.

Establishing a default withholding rule for PROMs has several benefits. First, it would encourage patients to answer questionnaires candidly. This approach would not be unprecedented, as psychotherapy notes already receive a higher degree of privacy protection than less sensitive information.[398]

Second, a default withholding rule may often spare health care providers from the work of reviewing all a patient's PROM responses to determine which should be disclosed under the minimum necessary standard.[399] Patient medical records might include a multitude of PROMs that could make the review task very burdensome. Likewise, a default exclusion rule would save requesters from having to process voluminous unwanted information upon receipt of disclosures. Employers, for example, would likely need only objective clinical data that reveals whether their applicants are qualified for physically demanding jobs. They are unlikely to be able to interpret PROMs accurately[400] and to find them helpful in making employment decisions.

The proliferation of sensitive data provided through PROMs could further intensify data security concerns. To promote compliance with the HIPAA Security Rule, the U.S. Department of Health and Human Services offers numerous data security resources on its website.[401] It should continue to update these resources as technology changes and experts develop new recommendations.

Health care providers must also be vigilant about data security and ensure that skilled professionals are tasked with its maintenance. Some commentators have decried health care providers' lack of preparedness for cybersecurity attacks.[402] According to one report, seventy-nine percent of data breaches in 2020

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minimum amount of protected health information necessary to accomplish the purpose of a non-routine disclosure or request.").

398 45 C.F.R. § 164.508 (a)(2) (2022) (significantly restricting covered entities' ability to use psychotherapy notes for treatment, payment, or healthcare operations without patient consent even though the HIPAA Privacy Rule allows for such uses in the case of most protected health information).

399 45 C.F.R. § 164.502(b) (2022) (describing minimum necessary standard).

400 *See supra* Part I.C (discussing PROM shortcomings and concerns).

401 *Security Rule Guidance Material*, U.S. DEP'T HEALTH & HUM. SERVS, https://www.hhs.gov/hipaa/for-professionals/security/guidance/index.html (last viewed Nov. 1, 2022).

402 Devin Partida, *5 Biggest Challenges of Health Care Data Security in 2022*, HEALTH IT ANSWERS (Feb. 23, 2022), https://www.healthitanswers.net/5-biggest-challenges-of-health-care-data-security-in-2022/ ("Medical organizations' vast amounts of sensitive patient data make them prime targets, and many lack the expertise and tools necessary to protect themselves"); Emily

involved healthcare organizations.[403] As others have noted, "Just as hand washing is a foundational element of modern medicine, cyber hygiene must be regarded as a basic and essential component of a functioning medical system."[404]

2. Medical Malpractice Liability

Clinicians and health care entities should be aware of the potential for malpractice liability associated with PROMs.[405] Liability could arise from failure to review and address data provided in PROMs, excessive reliance on PROMs, or failure to adopt PROMs that have become the standard of care.[406] Medical malpractice attorneys should learn to investigate PROM use when representing both plaintiffs and defendants. For its part, the medical community should undertake efforts to minimize the risk of PROM-related litigation, including formulating clinical practice guidelines for health care providers about PROM implementation and educating patients about PROM use.

a. The Role of PROMs in Litigation

In preparing for litigation, both plaintiffs' attorneys and defense attorneys should investigate whether PROMs were used during treatment. Plaintiffs' attorneys should ask clients whether they completed PROMs, what information they provided, whether physicians discussed PROMs with them, and whether they believe their doctors ignored PROM data. Defense attorneys should likewise ask clients whether they used PROMs and how they handled data provided through PROMs. Discovery should routinely include queries about PROMs, such as whether they were utilized, reviewed, or served as the basis for any decision.

b. Clinical Practice Guidelines

Health care providers should proceed with caution when implementing

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Skahill & Darrell M. West, *Why Hospitals and Healthcare Organizations Need to Take Cybersecurity More Seriously*, BROOKINGS (Aug. 9, 2021), https://www.brookings.edu/blog/techtank/2021/08/09/why-hospitals-and-healthcare-organizations-need-to-take-cybersecurity-more-seriously/.

403 Jessica Davis, *Healthcare Accounts for 79% of All Reported Breaches, Attacks Rise 45%*, HEALTH IT SEC. (Jan. 5, 2021), https://healthitsecurity.com/news/healthcare-accounts-for-79-of-all-reported-breaches-attacks-rise-45.

404 Skahill & West, *supra* note 402.

405 *See supra* Part II.B.

406 *Id.*; Michelle M. Mello, *Of Swords and Shields: The Role of Clinical Practice Guidelines in Medical Malpractice Litigation*, 149 U. PA. L. REV. 645, 648-49 (2001).

PROM programs and selecting PROMs. Ideally, trustworthy professional organizations and government entities will develop clinical practice guidelines (CPG) that providers can follow in implementing PROM programs.[407] CPGs are "statements that include recommendations intended to optimize patient care."[408] Providers would benefit from guidance regarding the incorporation of PROMs into clinical practice. CPGs could include the technical guidance regarding PROM selection and administration provided above. They could also address how to induce as many patients as possible to complete PROMs, how to review PROMs efficiently, how to determine whether PROM scores require any response, the extent to which PROMs should be discussed during office visits, and more.

It is unclear whether following CPGs could support a defense in a medical malpractice lawsuit.[409] Some experts argue that CPGs should never be admissible in court as evidence of the standard of care because they constitute recommendations rather than proof of actual customary medical practice.[410] Nevertheless, several courts have permitted litigants to use CPGs as evidence regarding the standard of care.[411]

Regardless of CPGs' admissibility, carefully formulated and widely disseminated guidance would be valuable for health care providers as they transition to implementing PROMs. It could prevent them from making obvious mistakes that could lead to malpractice litigation and help them operate in ways that promote patients' trust and cooperation.

c. Patient Education and Notice

Providers would be wise to communicate clearly with patients regarding how PROMs will be used and what expectations patients should have with respect to them.[412] Patients who are asked to complete PROMs should be given

407 *See* Hoffman & Podgurski, *supra* note 245, at 1570-72 (discussing clinical practice guidelines).

408 *Clinical Practice Guideline Manual*, AM. ACAD. OF FAM. PHYSICIANS, https://www.aafp.org/family-physician/patient-care/clinical-recommendations/cpg-manual.html (last visited Dec. 11, 2022).

409 Maxwell J. Mehlman, *Professional Power and the Standard of Care in Medicine*, 44 ARIZ. ST. L.J. 1165, 1230-32 (2012) (discussing the role of medical practice guidelines as evidence of the standard of care).

410 Joseph P. McMenamin et al., *Medicolegal Sidebar: Clinical Practice Guidelines—Do They Reduce Professional Liability Risk?*, 478 CLINICAL ORTHOPAEDICS RELATED RSCH. 23, 23 (2020); Mello, *supra* note 406, at 648.

411 Hoffman & Podgurski, *supra* note 245, at 1570-72; McMenamin et al., *supra* note 410, at 23-24; Mello, *supra* note 406, at 663-67 (discussing the role of CPGs in litigation).

412 *See supra* Part II.B.1 and accompanying text (discussing liability concerns relating to physicians' management of PROMs).

verbal and written explanations of whether doctors will review PROMs in a timely fashion and contact patients about them when appropriate. If PROMs will not be routinely reviewed, patients should be told why they are being asked to complete PROMs (e.g., for quality improvement purposes) and instructed that they should not assume their physicians are aware of all the data they have provided in PROM questionnaires.

On the other hand, if doctors plan to rely on PROMs in making medical decisions because they do not have adequate time for lengthy discussions during patient encounters, it is particularly important that patients be clearly informed that it is vital that they complete their PROM questionnaires. Patients must be warned that their care might be compromised if they ignore requests for PROMs or answer questionnaires only partially, thereby withholding important information from clinicians.

Such notice would be consistent with other notice practices in the medical arena. The HIPAA Privacy Rule requires health care providers to give patients notice of their privacy practices.[413] The American Medical Association's Code of Medical Ethics Opinion 2.3.1 addresses electronic communication with patients.[414] It advises physicians to "[n]otify the patient of the inherent limitations of electronic communication, including possible breach of privacy or confidentiality . . . and possible delays in response."[415] A similar notice regarding PROMs would help patients understand their function and limitations and potentially prevent litigation. Written notices should preferably be accompanied by verbal explanations and perhaps training videos to reinforce patient understanding and learning.[416] Documentation showing that patients received this guidance could also serve as compelling evidence in clinicians' defense.

3. PROM Use by Regulatory Agencies

The FDA and CMS do not presently require PROMs for any oversight purpose, though regulated entities have the option of submitting them to meet certain requirements.[417] Given the current shortcomings and pitfalls of PROMs, it is premature for the FDA and CMS to make them mandatory. The agencies

413 45 C.F.R. § 164.520(a) (2022).

414 *Electronic Communication with Patients*, AM. MED. ASSOC., https://www.amaassn.org/delivering-care/ethics/electronic-communication-patients (last visited Dec. 11, 2022).

415 *Id.*

416 Anne Johnson et al., *Written and Verbal Information Versus Verbal Information Only for Patients Being Discharged from Acute Hospital Settings to Home*, COCHRANE DATABASE SYSTEMATIC REV., 2003, at 2 (recommending that patients be given both written and verbal instructions).

417 *See supra* notes 289-300 and 313-319 and accompanying text.

should continue to work with experts to produce PROM guidance for regulated entities so that PROMs that are used voluntarily provide sound data.[418]

In addition, the FDA should continue to scrutinize any PROMs that are used to meet regulatory requirements and to provide assessments as to whether they are "fit-for-purpose."[419] CMS would be wise to undertake a similar review and approval process for any PROMs it accepts for payment programs. Note that a determination that a PROM is fit for purposes of FDA or CMS determinations will not necessarily mean that it is also an appropriate choice for clinical care.

4. Financial Incentives

Both the federal government and private insurers can institute financial incentive programs to promote PROM adoption. This section posits that a government program akin to the one established for EHRs is unlikely. Private insurers, however, may well opt to pay providers bonuses for PROM use, though they should not penalize providers for deficient PROM scores at this time.

a. Government Incentives

To accelerate the adoption of PROMs, Congress could pass legislation that establishes a federal incentives program and regulations for PROM adoption. This approach would follow the precedent set by the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009.[420] The statute dedicated $27 billion to the promotion of health information technology. The funding was used to award generous incentive payments to providers who adopted certified EHR systems and met regulatory specifications for their use.[421] In conjunction with the HITECH Act, CMS enacted the Meaningful Use regulations that detailed objectives that clinicians had to meet with respect to EHR system operation to receive payments.[422] In addition, it established a process for the certification of EHR systems.[423]

Congress could adopt the same approach with respect to PROMs.[424] It could

418 *See supra* notes 293, 304-307, and 317 and accompanying text (listing several existing and developing guidance documents).

419 *See supra* notes 296-297and accompanying text.

420 Health Information Technology for Economic and Clinical Health (HITECH) Act, Pub. L. No. 111-15, 123 Stat. 226 (2009) (codified as amended in scattered sections of 42 U.S.C.).

421 SHARONA HOFFMAN, ELECTRONIC HEALTH RECORDS AND MEDICAL BIG DATA 2 (2016). Eligible professionals could receive up to $43,720 from Medicare and up to $63,750 from Medicaid. *Id.* at 39.

422 *Id.* at 42-46; 42 C.F.R. §§ 495.2-495.370 (2022).

423 HOFFMAN, *supra* note 421, at 46-49; 45 C.F.R. § 170.314 (2022).

424 NATIONAL QUALITY FORUM, *supra* note 7, at 23; Wu et al., *supra* note 279, at 1869.

enact legislation that empowered CMS to establish a financial incentive program along with regulations for PROM implementation. PROMs would be certified if they met particular requirements such as those outlined above. Providers who work with Medicare and Medicaid patients could receive payments to offset PROM-related investments of time and money. CMS regulations would strive to ensure that providers not only collect suitable PROM data but also employ them to improve patient care.

A PROMs incentive program, however, is improbable. First, such an initiative would require an investment of billions of dollars,[425] and PROMs implementation is unlikely to be a high priority for Congress in this divisive and crisis-prone era. Second, it is doubtful that clinicians who are already overburdened will be receptive to additional regulatory requirements, even if they are accompanied by incentive payments. The meaningful use regulations were widely criticized and resented.[426] PROMs regulations are likely to receive a similar reception. Health care providers would be even more resentful of regulatory mandates that are not accompanied by financial payments to compensate for PROM implementation costs. At this time, CPGs and government agency guidelines may remain the better option.

b. Private Payer Incentives

Alternatively, private payers could offer health care providers financial incentives to implement PROMs. This could be an attractive option for payers that believe PROMs can improve health outcomes and save costs.[427] As discussed above, BCBSMA already piloted such an incentive program.[428]

BCBSMA paid providers for participating in the PROMs initiative but did not adjust insurance coverage based on PROM data.[429] This policy encouraged PROM adoption because it did not create any risk of penalty for providers, even if their patients' PROM scores appeared unfavorable. Given the many existing challenges of PROM implementation, this is a prudent approach.

It is important to understand that financial incentives for PROM adoption

425 *See supra* note 421 and accompanying text.

426 HOFFMAN, *supra* note 421, at 49-50 (noting that some clinicians called the regulations the "meaningless abuse" regulations); Srinivas Emani et al., *Physician Beliefs about the Meaningful Use of the Electronic Health Record: A Follow-Up Study*, 8 APPLIED CLINICAL INFORMATICS 1044, 1050 (2017) ("Only a fifth of the physicians responding to our survey agreed or strongly agreed that the meaningful use of the EHR would improve patient-centered care and the quality of care.").

427 *See supra* notes 84-87, 92-97 and 327-329and accompanying text (discussing medical benefits and cost savings associated with PROMs).

428 *See supra* notes 319-328and accompanying text.

429 *See supra* notes 323-324 and accompanying text.

alone do not guarantee that PROMs will be collected consistently or used effectively to promote health care improvements. A 2020 study found that incentives increased PROM collection but did not necessarily lead to successful PROM programs.[430] Successful clinics were defined as those with a "mean collection rate in the 6 months prior to January 2019 [that] was 50% or greater."[431] According to the study, health care organizations are most likely to be successful if they engage physicians in building enthusiasm for the benefits of PROMs and provide training regarding PROM use.[432] Physician enthusiasm will likely depend on how cumbersome PROM review is and on the availability of tools such as AI that facilitate PROM use. Nevertheless, if employed in conjunction with some of the strategies described above, monetary inducements can play a useful role in encouraging clinicians to embrace PROMs and build a productive PROMs program.

CONCLUSION

PROMs hold promise as an emerging clinical tool that can also contribute to research, health care administration, and regulation. As other scholars have noted, PROMs "directly support the primary goal of much of health care: to improve health-related quality of life," because "[n]o one can judge this better than the patient."[433] The emergence of PROMS is particularly timely because physicians have ever-shrinking amounts of time to collect data from patients in face-to-face visits.

But PROMs currently have significant pitfalls, and their implementation is complex. This Article has argued that providers should be keenly aware of medical malpractice risks associated with PROMs and that the HIPAA Privacy Rule's minimum necessary provision should be revised to address PROMs specifically. It further posits that it would be premature for the FDA, CMS, or private insurers to require PROM submission at this time.

Many strategies can be employed to strengthen PROMs and facilitate their integration into clinical practice and other arenas. These include clinical practice guidelines, patient education, financial incentives, PROM analysis by AI, stakeholder input, pilot programs, psychometric evaluations, and a variety of other safeguards relating to PROM selection and implementation. It remains to be seen whether PROMs can become a consistently reliable tool for clinicians, researchers, and others. But with careful planning and execution by qualified

430 Sisodia et al., *supra* note 74, at 1.
431 *Id.* at 3.
432 *Id.* at 6.
433 Wu et al., *supra* note 279, at 1864.

experts, PROMs may be able to fulfill their promise of serving as an important instrument to promote health care delivery improvements and bolster efforts to control medical costs.

Back to *Bakke*: The Compelling Need for Diversity in Medical School Admissions

Justin Cole & Gregory Curfman*

Abstract:

In Supreme Court cases involving affirmative action in university admissions prior to 2023, most notably *Bakke* and *Grutter*, the Court upheld the constitutionality of race-based admissions on the basis of the diversity rationale. This rationale contends that racial and ethnic diversity in university classrooms benefits the education of all students, regardless of their race or ethnicity. Now, though, the Court has effectively overturned decades of precedent in deciding *Students for Fair Admissions, Inc. v. President & Fellows of Harvard College* and *Students for Fair Admissions, Inc. v. University of North Carolina*.

This Article examines the diversity rationale going back to *Bakke* and proceeding all the way to the recent decision in *Students for Fair Admissions*. We concede the weaknesses of the diversity rationale, which, along with the purported lack of reliance interests since *Grutter*, contributed to the Court ending affirmative action nationwide. Yet we maintain that diversity in the context of medical school admissions should be viewed as a compelling interest for the purposes of equal protection analysis given the significant benefits of a diverse physician workforce to the health care system, particularly in the context of providing quality care to historically marginalized groups. We conclude by identifying a few possible paths forward now that the Court has deemed affirmative action unlawful nationwide.

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INTRODUCTION

At the end of June, the United States Supreme Court issued an opinion covering two cases implicating the use of affirmative action in undergraduate admissions policies: *Students for Fair Admissions, Inc. v. President & Fellows of Harvard College* and *Students for Fair Admissions, Inc. v. University of North Carolina*.[1] This opinion, authored by Chief Justice Roberts and joined by the five other members of the Court's conservative bloc, rejected the diversity rationale introduced in *Regents of the University of California v. Bakke*[2] and affirmed in *Grutter v. Bollinger*[3] as insufficient justification for affirmative action programs in university admissions.[4] Dismissing diversity-related interests as "inescapably imponderable,"[5] the majority "ma[de] clear that *Grutter* is, for all intents and purposes, overruled,"[6] though Chief Justice Roberts appeared to stop short of expressly overruling *Grutter*. Because the outcome of *Students for Fair Admissions* is likely the end of affirmative action in higher education generally[7]—for both undergraduate and graduate institutions—this Article will examine the consequences of the radically different legal landscape, focusing particularly on the effect on student admissions to medical schools in the United States and the downstream consequences for the physician workforce and the health care system more broadly.

This Article will proceed in five parts. Part I will return to *Bakke*,[8] the landmark decision that had previously provided the foundation for affirmative action policies in universities across the country since it was decided over four decades ago.[9] Part II will examine whether the controlling opinion in *Bakke*

1 Students for Fair Admissions, Inc. v. President & Fellows of Harv. Coll., 600 U.S. ____ (2023) (slip op.).

2 438 U.S. 265 (1978).

3 539 U.S. 306 (2003).

4 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 23-24).

5 *Id.* at 24.

6 *Id.* at 58 (Thomas, J., concurring).

7 *But see infra* Part V. As will be discussed below, the majority notably included a footnote that excluded military academies from its ruling.

8 438 U.S. 265 (1978).

9 *See* Symposium, Bakke *at 40: Diversity, Difference, and Doctrine*, 52 U.C. DAVIS L. REV. (Oct. 26, 2018), https://lawreview.law.ucdavis.edu/symposia/2018-fall/ (discussing the lasting impacts of *Bakke*); Charles Adside III, *Replay That Tune: Defending* Bakke *on Stare Decisis Grounds*, 64 CLEV. ST. L. REV. 519, 542 (2016) (describing how diversity became "the organizing principle at the nation's colleges and universities" in the wake of *Bakke*); *see also* Adam Harris, *The Supreme Court Justice Who Forever Changed Affirmative Action*, ATLANTIC (Oct. 13, 2018), https://www.theatlantic.com/education/archive/2018/10/how-lewis-powell-changed-affirmative-action/572938/ (arguing that *Bakke* "inadvertently changed how colleges go about recruiting and enrolling racial minorities"). *But see* Susan Welch & John Gruhl, *Does* Bakke *Matter? Affirmative Action and Minority Enrollments in Medical and Law Schools*, 59 OHIO ST. L.J. 697, 718 (1998)

written by Justice Powell was rightfully viewed as precedent in *Grutter*. Part III will assess the weaknesses of *Grutter* and discuss how it was treated by the majority in *Students for Fair Admissions*. Part IV will then review the impact of *Students for Fair Admissions* on medical school admissions and the resulting racial and ethnic composition of the physician workforce. Part V will briefly conclude, discussing the paths forward now that the Court has forbidden universities from engaging in race-based admissions practices.

I. DISTILLING *BAKKE*

A. Bakke *as a Case about Medical School Admissions*

Bakke notably dealt with an affirmative action admissions program to a medical school, the University of California Davis (UC Davis) School of Medicine.[10] In certain respects, criteria and priorities for admissions to medical schools may differ from those for undergraduate and other graduate-level admissions.[11] The distinctive characteristics of medical school admissions are important to *Bakke* but have been infrequently discussed.[12]

(concluding that "the impact of *Bakke* on the number of minority applicants or enrollees was minimal"); *cf.* Rachel F. Moran, Bakke*'s Lasting Legacy: Redefining the Landscape of Equality and Liberty in Civil Rights Law*, 52 U.C. DAVIS L. REV. 2569, 2608 (2019) (describing *Bakke*'s "limited impact outside of higher education"). *See generally* WILLIAM G. BOWEN & DEREK BOK, THE SHAPE OF THE RIVER: LONG-TERM CONSEQUENCES OF CONSIDERING RACE IN COLLEGE AND UNIVERSITY ADMISSIONS (1998) (arguing that affirmative action has produced important benefits in the area of higher education).

10 *Bakke*, 438 U.S. at 269.

11 *See* Barbara A. Noah, *A Prescription for Racial Equality in Medicine*, 40 CONN. L. REV. 675, 703-05 (2008). As Noah points out, "[t]he learning experience for undergraduates, law students, and medical students, for example, differs significantly because the purpose of these programs and the eventual occupations of their participants differ." *Id.* at 703-04. Medical education within a diverse medical school class, for instance, "directly benefits the patients to whom these physicians provide care," whereas in the law or business school contexts, "the stakes after graduation may be lower." *Id.* at 704. "For better or worse, many attorneys or [business school graduates] will enter practices or businesses where they will encounter few minority clients," whereas "most physicians will care for some, if not many, patients whose race, ethnicity, religion, and educational level differs from their own, and the quality of care these patients receive can have a significant impact on their health and quality of life." *Id.* at 704-05. In short, "medical education requires student interaction that differs in kind from that experienced by undergraduates, law, or business students." *Id.* at 705. Other commentators have also described the differences between medical school admissions and undergraduate and other graduate-level admissions. *See, e.g.*, Rebecca C. Flanagan, *Do Med Schools Do It Better? Improving Law School Admissions by Adopting a Medical School Admissions Model*, 53 DUQ. L. REV. 75 (2015) (expounding upon the differences between medical school and law school admissions processes).

12 See, for example, the following frequently cited articles that do not discuss medical school admissions: Richard D. Kahlenberg, *Class-Based Affirmative Action*, 84 CALIF. L. REV. 1037 (1996); Charles R. Lawrence III, *Two Views of the River: A Critique of the Liberal Defense of*

The faculty of the UC Davis School of Medicine formulated a special admissions approach, the Task Force program, in which sixteen of one hundred seats were allocated to students who were economically or educationally disadvantaged and students who wished to be considered as members of minority groups (defined as African American, Hispanic, or Native American).[13] Admissions for the other eighty-four seats were administered by a separate committee.[14] Although disadvantaged White students could also apply through the Task Force program, and many did, none were ever admitted through that mechanism.[15] After Allan Bakke—who was also rejected from eleven other medical schools, including his alma mater, the University of Minnesota[16]—was twice rejected by the UC Davis School of Medicine, he subsequently brought a lawsuit alleging that the Task Force program, in which he was unable to participate, discriminated against him on the basis of race. The Superior Court of California found that the program violated the California Constitution, Title VI of the Civil Rights Act of 1964, and the Equal Protection Clause of the Fourteenth Amendment, but refused to order that Bakke be admitted to the medical school, holding that he had not demonstrated that he would have been admitted in the absence of these constitutional and statutory violations.[17] On appeal, the California Supreme Court affirmed the portions of the lower court's opinion declaring the Task Force program unlawful,[18] but directed that Bakke be admitted to the medical school.[19]

At the Supreme Court, where the case received immense public attention,[20] the petitioner, the Regents of the University of California, defended the Task Force program on the basis of society's need for a racially and ethnically diverse workforce of physicians to care for an increasingly diverse population.[21] As is

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Affirmative Action, 101 COLUM. L. REV. 928 (2001); Reva B. Siegel, *Foreword: Equality Divided*, 127 HARV. L. REV. 1 (2013).

13 *Bakke*, 438 U.S. at 272-76, 272 n.1.

14 *Id.* at 274.

15 *Id.* at 276.

16 Michael Selmi, *The Life of* Bakke*: An Affirmative Action Retrospective*, 87 GEO. L.J. 981, 985 (1999); *A Landmark Case Goes to Court*, HARV. CRIMSON (Oct. 12, 1977), https://www.thecrimson.com/article/1977/10/12/a-landmark-case-goes-to-court/.

17 *Bakke*, 438 U.S. at 270. .

18 Bakke v. Regents of Univ. of Cal., 553 P.2d 1152, 1155 (Cal. 1976) (en banc).

19 *Id.* at 1172.

20 *See* William Claiborne, *57 Law Briefs on* Bakke, WASH. POST (Sept. 17, 1977), https://www.washingtonpost.com/archive/politics/1977/09/17/57-law-briefs-on-bakke/b3cb7c7c-b70e-4008-adc1-964886cbd552/ (reporting that *Bakke* generated more legal briefs than other Supreme Court case in at least twenty years); Elliot E. Slotnick, *Television News and the Supreme Court: A Case Study*, 77 JUDICATURE 21, 24-25 (1993) (analyzing data and concluding that "*Bakke* was considered an important story by television news"); Guido Calabresi, *Bakke as Pseudo-Tragedy*, 28 CATH. U. L. REV. 427 (1979) (describing the national attention surrounding *Bakke*).

21 Brief for Petitioner, *Bakke*, 438 U.S. (No. 76-811), 1977 WL 189474, at *24-25

well known today, many patients prefer a physician of their own race or ethnicity,[22] which can help minimize the effect of racial bias and thereby improve the quality of care.[23] The petitioner also argued that physicians from minority groups may be more likely to care for minority populations, who are significantly underserved with respect to health care.[24] Throughout the history of the United States, educating physicians from historically underrepresented groups has been severely impeded—in large part because of the long history of racial discrimination and inadequate educational opportunities for them.[25] Relatedly, the petitioner also referred to the importance of educating a diverse physician workforce. In short, then, the petitioner crisply laid out several important purposes of the affirmative action program in its brief:

> Among the objectives of this program were enhanced diversity in the student body and the profession, improved medical care in underserved minority communities, elimination of historic barriers to medical careers for disadvantaged members of racial and ethnic minority groups, and increased aspiration for such careers on the part of minority students. It was the judgment of the Davis faculty that the Task Force program was the "only method" that would achieve significant enrollment of minority applicants.[26]

These points were underscored in oral arguments delivered by Archibald Cox, a Harvard professor and the former Solicitor General under President John F. Kennedy. As will be discussed below, Justice Powell in his opinion ultimately dismissed all the petitioner's arguments except the one pertaining to increasing diversity. In the end, the Court in *Bakke* proved to be markedly fractured, delivering six separate opinions, three of which will be discussed in the next

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[hereinafter *Bakke* Brief for Petitioner].

22 *See infra* note 171.

23 *See infra* note 172.

24 *Bakke* Brief for Petitioner, *supra* note 21, at *3 (emphasis added) (citations omitted).

25 *See* Yasmeen Daher et al., *The History of Medical Education: A Commentary on Race*, 121 J. OSTEOPATHIC MED. 163 (2021), https://www.degruyter.com/document/doi/10.1515/jom-2020-0212/html?lang=en; Vann R. Newkirk II, *America's Health Segregation Problem*, ATLANTIC (May 18, 2016), https://www.theatlantic.com/politics/archive/2016/05/americas-health-segregation-problem/483219/. It is also important to emphasize that racial discrimination against physicians of color remains prevalent today. *See* Amarette Filut, *Discrimination Toward Physicians of Color: A Systematic Review*, 112 J. NAT'L MED. ASS'N 117 (2020); Usha Lee McFarling, *'It Was Stolen From Me': Black Doctors Are Forced Out of Training Programs at Far Higher Rates Than White Residents*, STAT (June 20, 2022), https://www.statnews.com/2022/06/20/black-doctors-forced-out-of-training-programs-at-far-higher-rates-than-white-residents/.

26 *Bakke* Brief for Petitioner, *supra* note 21, at *3 (emphasis added) (citations omitted).

section.

B. A Sharply Divided Supreme Court

1. The Stevens Opinion: Title VI Unambiguously Forbids Race-Based Preferences

Four justices (Justice Stevens, joined by Chief Justice Burger and Justices Stewart and Rehnquist) decided the case solely on the basis of Title VI of the Civil Rights Act of 1964, which states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[27] These justices determined that the plain text of Title VI was unambiguous and prohibited discrimination on the basis of race by any program or activity receiving federal funding.[28] Because the UC Davis School of Medicine did receive such funding, the Stevens group judged that the special admissions program clearly violated Title VI.[29] Because they decided the case solely on statutory grounds, they did not address the constitutional issue.[30]

2. The Brennan Opinion: Race-Based Preferences as a Remedy for Past Discrimination

A separate group of four justices (Justices Brennan, White, Marshall, and Blackmun) arrived at a completely different conclusion, namely that "[g]overnment may take race into account when it acts not to demean or insult any racial group, but to remedy disadvantages cast on minorities by past racial prejudice."[31] Viewing Title VI as "merely extend[ing] the constraints of the Fourteenth Amendment to private parties who receive federal funds," the Brennan group determined that nothing in the legislative history of Title VI compelled the conclusion that "Congress intended to bar all race-conscious efforts to extend the benefits of federally financed programs to minorities."[32] After next concluding that "racial classifications are not *per se* invalid under the Fourteenth Amendment,"[33] the Brennan group concluded that intermediate

27 42 U.S.C. § 2000d.

28 *Bakke*, 438 U.S. at 412-13 (Stevens, J., concurring in the judgment in part and dissenting in part).

29 *Id.* at 421 (Stevens, J., concurring in the judgment in part and dissenting in part).

30 *Id.* at 411-12 (Stevens, J., concurring in the judgment in part and dissenting in part).

31 *Id.* at 325 (Brennan, J., concurring in part).

32 *Id.* at 327-28 (Brennan, J., concurring in part).

33 *Id.* at 356 (Brennan, J., concurring in part).

scrutiny was the appropriate standard of review,[34] and that the UC Davis special admissions program met that standard.[35] In short, it endorsed affirmative action programs intended to "remove the disparate racial impact its actions might otherwise have" if there was reason to believe that the disparate impact is itself the product of past discrimination, *whether its own or that of society at large*.[36]

3. The Decisive Powell Opinion: Diversity as the Sole Compelling Justification

With two groups of four justices delivering opposing opinions, this left a single justice—Justice Powell—to determine the outcome. Much has been written about Justice Powell's opinion in *Bakke*,[37] but it is nevertheless worth clarifying certain aspects of the opinion. Justice Powell ultimately agreed with the Stevens group in their judgment that the UC Davis special admissions plan was not permissible,[38] but Justice Powell did not base this conclusion on Title VI, which he concluded, like the Brennan group, "proscribe[d] only those racial classifications that would violate the Equal Protection Clause."[39] Instead, he relied on the Fourteenth Amendment and applied strict scrutiny,[40] rejecting what he characterized as the petitioner's "more restrictive view" that "discrimination against members of the white 'majority' cannot be suspect if its purpose can be characterized as 'benign.'"[41] Justice Powell then evaluated each of the four purposes of the special admissions program as expressed in the petitioner's brief:

> (i) "reducing the historic deficit of traditionally disfavored minorities in medical schools and in the medical profession"; (ii) countering the effects of societal discrimination; (iii) increasing the number of physicians who will practice in communities currently underserved; and (iv) obtaining the educational

34 *Id.* at 358-59 (Brennan, J., concurring in part).

35 *Id.* at 369-74 (Brennan, J., concurring in part).

36 *Id.* at 369 (Brennan, J., concurring in part).

37 *See, e.g.*, Nancy Leong, *Racial Capitalism*, 126 HARV. L. REV. 2151 (2013); Haney López, *"A Nation of Minorities": Race, Ethnicity, and Reactionary Colorblindness*, 59 STAN. L. REV. 985 (2007); JOHN C. JEFFRIES, JR., JUSTICE LEWIS F. POWELL, JR.: A BIOGRAPHY 332 (1st ed. 2001); Vincent Blasi, Bakke *as Precedent: Does Mr. Justice Powell Have a Theory?*, 67 CALIF. L. REV. 21 (1979); Antonin Scalia, *The Disease as Cure: "In Order to Get Beyond Racism, We Must First Take Account of Race"*, 1979 WASH. U. L. Q. 147 (1979); J. HARVIE WILKINSON, III, FROM *BROWN* TO *BAKKE*: THE SUPREME COURT AND SCHOOL INTEGRATION: 1954-1978, at 301 (1979).

38 *Bakke*, 438 U.S. at 319-20.

39 *Id.* at 267, 287.

40 *Id.* at 291.

41 *Id.* at 294.

benefits that flow from an ethnically diverse student body.[42]

Justice Powell rejected each of the first three rationales as insufficiently compelling to justify affirmative action in university admissions policies. He was particularly critical of the first, insisting that "[i]f [the] petitioner's purpose is to assure within its student body some specified percentage of a particular group merely because of its race or ethnic origin, such a preferential purpose must be rejected not as insubstantial but as facially invalid."[43] In particular contrast to the Brennan group, he was also strongly opposed to the second, reparations for past societal racial discrimination, as an acceptable justification:

> The State certainly has a legitimate and substantial interest in ameliorating, or eliminating where feasible, the disabling effects of identified discrimination. The line of school desegregation cases, commencing with *Brown*, attests to the importance of this state goal and the commitment of the judiciary to affirm all lawful means toward its attainment. That goal was far more focused than the remedying of the effects of "societal discrimination," *an amorphous concept of injury that may be ageless in its reach into the past*.[44]

Finally, as to the third rationale, although he accepted that "a State's interest in facilitating the health care of its citizens" could be sufficiently compelling to justify race-based preferences, he found little evidence in the record indicating that the UC Davis special admissions program was "either needed or geared" to do so.[45]

Yet in contrast to the Stevens group, Justice Powell believed that even though the UC Davis special admissions program was unconstitutional, the use of race-based preferences in university admissions could be constitutional in some circumstances based on a "diversity rationale."[46] Such rationale was premised on the idea that racial and ethnic diversity in university classrooms would benefit all students and provide educational value to the university community as a whole.[47] Justice Powell further proffered his view, ironic in the wake of *Students for Fair Admissions*, that Harvard College's "holistic" admissions program, in which race could be considered as a "plus" factor among many characteristics of applicants, was a constitutionally acceptable model of an admissions program that took race

42 *Id.* at 305-06 (citations omitted).
43 *Id.* at 307.
44 *Id.* (emphasis added).
45 *Id.* at 310.
46 *Id.* at 311-15.
47 *Id.* at 314.

into account.[48] Notably, while the Brennan group agreed with Justice Powell that Harvard College's holistic admissions program was constitutionally acceptable,[49] these justices did not explicitly endorse Justice Powell's diversity rationale. Instead, they adhered to their belief that reparations for past societal discrimination served as the strongest rationale for race preferences in admissions based on the text and history of the Fourteenth Amendment.[50] Justice Powell was therefore left alone among the justices in advocating for the diversity rationale for affirmative action.

Because Justice Powell's opinion in *Bakke* was considered to be the "narrowest" opinion among those written by the markedly fractured Court (as defined in *Marks v. United States*),[51] his opinion has been regarded as the controlling opinion in subsequent cases before the Court.[52] As such, in the wake of *Bakke*, the diversity rationale became the sole constitutionally-acceptable justification for affirmative action, and the holistic admissions program of Harvard College became emblematic of a constitutionally-acceptable model for race-based preferences in university admissions. However, a closer examination of the diversity rationale will raise questions as to whether it ever met the generally accepted requirements to stand as a precedent[53] justifying race-based preferences in university admissions.

II. THE DIVERSITY RATIONALE AS PRECEDENT

Although the provenance of the diversity rationale for affirmative action in higher education is often attributed to Justice Powell and an amicus curiae brief filed in *Bakke* submitted by four universities (Columbia University, Harvard University, Stanford University, and the University of Pennsylvania),[54] the formulation of the diversity rationale did not originate with Justice Powell or this

48 *Id.* at 316-19.

49 *Id.* at 379 (Brennan, J., concurring in part).

50 *Id.* at 369-73 (Brennan, J., concurring in part).

51 Marks v. United States, 430 U.S. 188 (1977).

52 *See Grutter*, 539 U.S. at 307 ("Since *Bakke*, Justice Powell's opinion has been the touchstone for constitutional analysis of race-conscious admissions policies . . . . [T]he Court endorses Justice Powell's view . . . ."); Gratz v. Bollinger, 539 U.S. 244, 269-75 (2003) (assessing the undergraduate program at the University of Michigan based on the analysis in Justice Powell's opinion in *Bakke*); Fisher v. Univ. of Tex. at Austin, 579 U.S. 365, 381 (2016) ("As this Court's cases have made clear, . . . a university may institute a race-conscious admissions program as a means of obtaining 'the educational benefits that flow from student body diversity.'") (citations omitted).

53 *See infra* Part III.

54 Brief for Columbia University, Harvard University, Stanford University & University of Pennsylvania as Amici Curiae Supporting Petitioner, *Bakke*, 438 U.S. (No. 76-811), 1977 WL 188007, at *11-13.

amicus brief.[55] This Part examines the origin of the diversity rationale and its standing as a precedent.

A. Archibald Cox and the Diversity Rationale

In 1974, four years before Justice Powell authored his opinion in *Bakke*, Archibald Cox, who argued on behalf of the petitioners in *Bakke*, filed an amicus curiae brief in *DeFunis v. Odegaard*, an affirmative action case under review by the Supreme Court that was declared moot before it was decided.[56] Marco DeFunis, Jr. had applied for admission to the University of Washington Law School,[57] but he was denied admission despite having higher grades and test scores than some minority students who were admitted.[58] He subsequently brought a lawsuit alleging racial discrimination in violation of the Equal Protection Clause of the Fourteenth Amendment.[59] After the University of Washington later decided to admit DeFunis,[60] the Supreme Court declined to decide the case on the merits.[61] However, Cox's amicus brief on behalf of the defendant remains the first clear statement of the diversity rationale as part of a legal argument.[62]

> The objective of improving education for all students is permissible and non-discriminatory. The means is reasonably adapted to the objective. Should it be held that any notice of race requires a "compelling" justification, then we submit that seriously seeking to improve the non-discriminatory educational opportunities afforded all students is such a purpose.[63]

Later in the brief, Cox focused on the specific benefits of diversity to a university community.

> [D]iversity surely may—and most experienced educators believe that it does—improve the education of all students. A hard-and-fast rule forbidding an institution to give favorable consideration to membership in a minority race or other minority group in

55 *See* David B. Oppenheimer, *Archibald Cox and the Diversity Justification for Affirmative Action*, 25 VA. J. SOC. POL'Y & L. 158 (2018).

56 416 U.S. 312 (1974) (per curiam).

57 *Id.* at 314.

58 *Id.* at 324-25 (Douglas, J., dissenting).

59 *Id.*

60 *Id.* at 315.

61 *Id.* at 319-20.

62 Oppenheimer, *supra* note 55, at 162.

63 Archibald Cox, *Archibald Cox Amicus Brief*, 25 VA. J. SOC. POL'Y & L. 208, 220 (2018).

> selecting an entering class from the qualified applicants would severely constrict the freedom of academic authorities to improve the non-discriminatory educational opportunities for the whole student body.[64]

It is noteworthy that Justice Powell attached an excerpt from Cox's amicus brief as an appendix to his opinion in *Bakke*.[65]

B. Critics of the Diversity Rationale

Although the diversity rationale for affirmative action in university admissions in Justice Powell's *Bakke* opinion was subsequently affirmed by the Supreme Court in both *Grutter* and *Fisher v. University of Texas at Austin* (*Fisher II*),[66] this justification was and has continued to be the subject of intense controversy. Among the first legal scholars to question the diversity rationale was Richard Posner, who wrote in 1974 about Archibald Cox's amicus brief in the *DeFunis* case that the diversity rationale was "fundamentally inconsistent with that of a policy against hostile discrimination."[67]

Guido Calabresi was similarly critical of the diversity rationale, describing it as "tricks and subterfuges" inevitably leading to the same result as a quota system for the admission of underrepresented minority students;[68] Justice Brennan had raised the same point in his opinion in *Bakke*.[69] Calabresi was among the first legal scholars to criticize the expansive deference provided to university admissions officers in making decisions about race-based preferences—behind closed doors and without public transparency. Calabresi was not alone in his critique and has been joined in a similar vein by other noted legal scholars including Thomas Sowell[70] and Brian Fitzpatrick.[71] In an article

64 *Id.* at 233.

65 *Bakke*, 438 U.S. at app. 321-24.

66 *See supra* note 52.

67 Richard A. Posner, *The* DeFunis *Case and the Constitutionality of Preferential Treatment of Racial Minorities*, 1974 SUP. CT. REV. 1, 7-8, 15 (1974).

68 Calabresi, *supra* note 20, at 444.

69 *Bakke*, 438 U.S. at 379 (Brennan, J., concurring in part) ("[T]here is no basis for preferring [the Harvard] program simply because in achieving the same goals that the Davis Medical School is pursuing, it proceeds in a manner that is not immediately apparent to the public.").

70 Thomas Sowell, *The 'Diversity' Fraud*, CREATORS (Dec. 20, 2016), https://www.creators.com/read/thomas-sowell/12/16/the-diversity-fraud ("Nothing so epitomizes the politically correct gullibility of our times as the magic word 'diversity.' The wonders of diversity are proclaimed from the media, extolled in the academy and confirmed in the august chambers of the Supreme Court . . . . But have you ever seen one speck of hard evidence to support the lofty claims?").

71 Brian T. Fitzpatrick, *The Diversity Lie*, 27 HARV. J. L. & PUB. POL'Y 385, 386 (2003) ("It is

from just last year, Adam Chilton and colleagues added to this list of critics:

> It is extremely difficult to think of a contentious legal question on which legal thinkers as varied as Guido Calabresi, Richard Delgado, Lino Graglia, Sanford Levinson, Melissa Murray, Antonin Scalia, and Clarence Thomas would locate common ground. Yet all of those legal minds agree that the diversity rationale's justification for affirmative action suffers from profound flaws. On the legitimacy of the diversity rationale, then, it would seem that there is precious little diversity of thought.[72]

In his recent book, *The Assault on American Excellence*, Anthony Kronman, a former dean of Yale Law School, raised provocative questions as to whether racial and ethnic diversity in university classrooms actually brings the type of educational value to all students that Justice Powell envisioned.[73] Kronman even argued that attempting to create diversity in university classrooms may inadvertently interfere with students' intellectual growth, individuality, and independence: "Those who today insist that our colleges and universities need to be more diverse sometimes give lip service to the diversity of individual talents, values, and judgments. But they mainly think of diversity in group terms and measure its presence or absence accordingly."[74]

More recently, in a pointedly provocative article, "Derailed by Diversity," Richard Thompson Ford wrote:

> While the ideal of diversity has encouraged modest efforts to promote racial integration, the term "diversity" has also become a lazy stand-in for any discussion of the generations of race-based exclusion and exploitation that make race-conscious hiring and college admissions necessary. In this way, "diversity" has encouraged us to ignore and minimize past injustices and distorted our understanding of what justice requires today.[75]

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quite clear that the University of Michigan lied to the Supreme Court when it claimed it discriminates to obtain the educational benefits of diversity, and well near every other elite university lies when they say the same thing. Accordingly, the diversity fight is not over—it has only just begun.").

72 Adam Chilton et al., *Assessing Affirmative Action's Diversity Rationale*, 122 COLUM. L. REV. 331, 355 (2022).

73 ANTHONY KRONMAN, THE ASSAULT ON AMERICAN EXCELLENCE (2019).

74 *Id.* at 19.

75 Richard Thompson Ford, *Derailed by Diversity*, CHRON. HIGHER. ED. (Sept. 2, 2022), https://www.chronicle.com/article/derailed-by-diversity.

Ford emphasized his view that in rejecting the reparations rationale for affirmative action and instead proffering the diversity rationale, Justice Powell was misguided and inadvertently set the stage for invalidating affirmative action in *Students for Fair Admissions*.[76] The reason for Justice Powell's adamant opposition to the reparations rationale for affirmative action remains uncertain,[77] but it is clear that he was responsible for eliminating this rationale from the Court's jurisprudence on affirmative action in higher education, a fact that various members of the majority in *Students for Fair Admissions* noted.[78]

C. The Diversity Rationale, Precedent, and a Fractured Opinion

The *Bakke* opinions were severely fractured, but a careful reading generates the inevitable conclusion that only Justice Powell endorsed the diversity rationale, as no other justice clearly stated his support for it.

Is it credible for precedent to be established by the opinion of a single justice? According to the *Marks* rule, precedent can be set by a single justice if that justice's opinion rests on the "narrowest grounds."[79] The *Marks* rule, formulated in 1977 (a year before *Bakke* was decided), was articulated by Justice Powell himself, who wrote the majority opinion in the case, though he did not provide a clear definition of "narrowest grounds."[80] However, it was the *Marks* rule that supported Justice Powell's opinion in *Bakke* becoming precedential and

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76 *Id.*

77 "The prevailing explanation characterizes [Justice] Powell [in *Bakke*] as a centrist who was sympathetic to the plight of racial minorities but who also worried about legitimating an interpretation of the Constitution that, from his perspective, would endow certain groups of Americans with more rights than others." Asad Rahim, *Diversity to Deradicalize*, 108 CALIF. L. REV. 1423, 1426 (2020). This theory suggests that "by basing his support of affirmative action on the importance of having various viewpoints represented on campuses, [Justice] Powell was able to allow for racially integrated universities without explicitly endorsing 'preferences' for racial minorities." *Id.* In a sense, then, conservative critics of Justice Powell accused him of of pretending to be concerned about diversity writ large while actually being concerned solely about racial diversity. *See, e.g.*, John H. McWhorter, *The Campus Diversity Fraud*, CITY J. (2002), https://www.city-journal.org/html/campus-diversity-fraud-12218.html; Scalia, *supra* note 37, at 148. Meanwhile, critical scholars on the left believe Justice Powell was primarily motivated by a belief that exposure to racial diversity would benefit White students. *See, e.g.*, Leong, *supra* note 37, at 2155, 2161-66. Anders Walker argued that Justice Powell's embrace of diversity was a result of his embrace of a brand of pluralism popular in the American South. *See generally* ANDERS WALKER, THE BURNING HOUSE: JIM CROW AND THE MAKING OF MODERN AMERICA (2018). Asad Rahim proposes that Justice Powell saw the diversity rationale as a means of "curb[ing] left-oriented radicalism" by "increas[ing] the representation of moderate and conservative viewpoints on campuses." Rahim, *supra*, at 1427-28.

78 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 17-18, 35); *id.* at ____ (slip op., at 29-30) (Thomas, J., concurring).

79 *See supra* note 51 and accompanying text.

80 *Marks*, 430 U.S. at 193-94.

providing the legal foundation for affirmative action in higher education until *Students for Fair Admissions*.

It is counterintuitive, and perhaps inconceivable, that the opinion of a single justice, joined by no others, could be regarded as binding precedent. Richard Re, a law professor at the University of Virginia, has argued that the *Marks* rule should be overturned on the basis that it "shifts costly interpretive burdens to later courts, privileges outlier views among the [j]ustices[,] and discourages desirable compromises."[81] Re argues instead that "Court precedent should form only when a single rule of decision has the express support of at least five [j]ustices.[82]

Justice Gorsuch, in *Ramos v. Louisiana*, stated his view that minority opinions should not be regarded as being precedential, and certainly not opinions of a single justice joined by no others (which he regarded as new and dubious).[83] On the other hand, Nina Varsava has correctly noted that opinions of single justices have previously stood as precedent.[84] Given the controversy surrounding the idea that opinions from single justices may be precedential, this matter should raise serious concerns about the precedential value of Justice Powell's opinion in *Bakke*. This also invites questions as to whether subsequent Court majorities, including in *Students for Fair Admissions*, should have focused on diversity as the only acceptable compelling interest for university affirmative action programs.

D. Bakke *and the First Amendment*

In defending the diversity rationale as a compelling state interest that survived strict scrutiny, Justice Powell primarily relied on the First Amendment: "Academic freedom, though not a specifically enumerated constitutional right, long has been viewed as a special concern of the First Amendment."[85] In short, Justice Powell believed academic freedom justified deferring to university admissions officers in their decisions to provide a "plus" factor based on an applicant's race.[86] As a basis for his view, Justice Powell cited Justice Frankfurter's concurring opinion in *Sweezy v. New Hampshire*:

> It is the business of a university to provide that atmosphere which is most conducive to speculation, experiment[,] and creation. It is an atmosphere in which there prevail "the four

81 Richard Re, *Beyond the* Marks *Rule*, 132 HARV. L. REV. 1942, 1943 (2019).
82 *Id.*
83 Ramos v. Louisiana, 140 S. Ct. 1390, 1403-04 (2020).
84 Nina Varsava, *Precedent on Precedent*, 169 U. PA. L. REV. ONLINE 118, 121 (2020).
85 *Bakke*, 438 U.S. at 312.
86 *Id.* at 312-13.

> essential freedoms" of a university—to determine for itself on academic grounds who may teach, what may be taught, how it shall be taught, and who may be admitted to study.[87]

In assessing the strength of the diversity rationale as precedent, it is important to consider whether the First Amendment actually provides direct support. As Justice Powell himself noted, academic freedom is not an enumerated constitutional right.[88] *Sweezy* was a case involving a professor suspected of subversive activities who refused to give testimony about a lecture he delivered at the university.[89] In this sense, it was clearly a First Amendment issue involving speech, but the case had nothing at all to do with university admissions; its connection to the *Bakke* case is therefore, at best, distant. Yet Justice Powell extended Justice Frankfurter's formulation of academic freedom in *Sweezy* to encompass the choice by some universities to give admissions preferences to underrepresented minority students. As Justice Thomas wrote in his dissent in *Grutter*, "I doubt that when Justice Frankfurter spoke of governmental intrusions into the independence of universities, he was thinking of the Constitution's ban on racial discrimination."[90]

E. Holding versus Dicta

While holdings in decided cases may serve to establish legal precedent, there has been ongoing debate about whether dicta—under certain circumstances—may also serve to set precedent. Randy Kozel has noted:

> A court's *holdings* receive deference in future cases. By contrast, the court's unnecessary *dicta* are relevant to the extent that their reasoning is persuasive . . . . [D]efining the scope of precedent can be a complex enterprise, with the traditional distinction between holdings and dicta reflecting only one consideration among many.[91]

How does this description of holdings and dicta apply to *Bakke*, specifically in regard to Justice Powell's diversity rationale and his reliance on Harvard's "plus factor" admissions program? Michael Abramowicz and Maxwell Stearns,

87 354 U.S. 234, 263 (1957) (Frankfurter, J., concurring in result). It is worth noting that Justice Frankfurter, in alluding to "the four essential freedoms" of a university, was referring to a statement from senior scholars in South Africa.

88 *Bakke*, 438 U.S. at 312.

89 *Sweezy*, 354 U.S. at 236-44.

90 *Grutter*, 539 U.S. at 364 (Thomas, J., concurring in part and dissenting in part).

91 RANDY J. KOZEL, SETTLED VERSUS RIGHT: A THEORY OF PRECEDENT 22 (2017).

in their detailed assessment of the strength of the precedent in Justice Powell's opinion in *Bakke*, argued that "[Justice] Powell's conclusion that diversity is a compelling interest counts as dicta" but his sanctioning of Harvard's "plus factor" admissions plan should be considered as a holding.[92] In contrast, Alan Meese concluded that both the diversity rationale and Justice Powell's endorsement of the Harvard "plus" plan should be considered as dicta and not appropriate for the establishment of precedent.[93] It is noteworthy that both legal scholars agreed that the diversity rationale was dicta but disagreed about whether the Harvard "plus" system was a holding or dicta, suggesting that this determination may be a closer call. Still, in regard to the precedential value of decisional rationales, Kozel took an intermediate position:

> We are thus left in a zone of uncertainty. Sometimes the Supreme Court insists on a firm line between rules and rationales in determining the forward-looking effect of precedent. In other cases, the lesson seems to be that decisional rationales are entitled to deference even if future courts disagree with them.[94]

The diversity rationale stands at the center of Justice Powell's opinion in *Bakke*. Yet with the Court's decision in *Students for Fair Admissions*, it, too, has been resigned to the veritable dustbin of history. In the next part, we will acknowledge some of the weaknesses of *Grutter* while also critiquing how the *Students for Fair Admissions* majority handled it.

III. THE WEAKNESSES AND DEMISE OF *GRUTTER*

In *Grutter*, the University of Michigan Law School utilized a holistic admissions program similar to the Harvard program praised by Justice Powell in *Bakke*, aiming to admit a "critical mass" of underrepresented minority (Black, Hispanic, and Native American) students.[95] Justice O'Connor's opinion, joined by four other justices, resulted in a 5-4 ruling affirming Justice Powell's opinion in *Bakke*. Unmistakably constructed around Justice Powell's opinion in *Bakke*,[96] Adam Chilton and his coauthors observed: "The core of Justice O'Connor's opinion for the Court in *Grutter* was a reaffirmation, and extension, of the diversity rationale pioneered by Justice Powell."[97] This Part will examine the

92 Michael Abramowicz & Maxwell Stearns, *Defining Dicta*, 57 STAN. L. REV. 953, 1077-78 (2005).

93 Alan J. Meese, *Reinventing* Bakke, FACULTY PUBL'NS (1998), https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=2469&context=facpubs.

94 KOZEL, *supra* note 91, at 81.

95 *Grutter*, 539 U.S. at 316.

96 *E.g., id.* at 323-25.

97 Chilton et al., *supra* note 72, at 344.

weaknesses of this approach as well as her invocation of a twenty-five-year "deadline" for race-conscious admissions programs. It will subsequently critique how the opinions in *Students for Fair Admissions* treated *Grutter*, especially its "deadline," focusing on how the principal dissent responds to the majority's focus on this aspect of *Grutter*.

A. The Exclusive Focus on the Diversity Rationale in Grutter

It is readily apparent that Justice O'Connor's *Grutter* opinion was strongly adherent to Justice Powell's diversity rationale in *Bakke*. Justice O'Connor discusses and accepts the First Amendment justification for the diversity rationale: race-based admissions are a product of academic freedom, and university officials should receive deference to determine whom they wish to admit and teach.[98] Yet, it is striking that she declines to apply the *Marks* rule to Justice Powell's opinion, determining that it was "unnecessary to decide" whether the diversity rationale was binding precedent.[99] In his dissent in *Grutter*, Justice Thomas observed that the Court decided not to rely on stare decisis in regard to Justice Powell's opinion in *Bakke* (declining to apply the *Marks* rule) while simultaneously fully embracing Justice Powell's diversity rationale.[100] Although this Article, in conjunction with many legal scholars, has expressed doubt as to the strength of the diversity rationale as compared to the others raised in *Bakke*, it is apparent that Justice O'Connor did supplement the reasoning laid out by Justice Powell in his *Bakke* opinion, expanding at least somewhat beyond the latter's focus on intellectual diversity. Citing the district court opinion, Justice O'Connor argued that the University of Michigan Law School's admission policy "promotes 'cross-racial understanding,' helps to break down racial stereotypes, and 'enables [students] to better understand persons of different races.'"[101] She also pointed out that "numerous studies show that student body diversity promotes learning outcomes, and 'better prepares students for an increasingly diverse workforce and society, and better prepares them as professionals.'"[102]

Two additional points about the focus on diversity by Justice O'Connor are notable in light of what essentially amounted to a dismissal of diversity-related benefits by the majority in *Students for Fair Admissions*. First, she plainly stated that the "benefits [were] not theoretical but real," citing American businesses as "hav[ing] made clear that the skills needed in [the] increasingly global marketplace can only be developed through exposure to widely diverse people,

98 *Grutter*, 539 U.S. at 324, 328-29.
99 *Id.* at 307.
100 *Id.* at 356-57 (Thomas, J., concurring in part and dissenting in part).
101 *Id.* at 330 (citations omitted).
102 *Id.*

cultures, ideas, and viewpoints."[103] Second, she relied heavily on an amicus brief filed on behalf of retired military officers.

> What is more, high-ranking retired officers and civilian leaders of the United States military assert that, "[b]ased on [their] decades of experience," a "highly qualified, racially diverse officer corps . . . is essential to the military's ability to fulfill its principle [sic] mission to provide national security." The primary sources for the Nation's officer corps are the service academies and the Reserve Officers Training Corps (ROTC), the latter comprising students already admitted to participating colleges and universities. At present, "the military cannot achieve an officer corps that is *both* highly qualified *and* racially diverse unless the service academies and the ROTC used limited race-conscious recruiting and admissions policies." To fulfill its mission, the military "must be selective in admissions for training and education for the officer corps, *and* it must train and educate a highly qualified, racially diverse officer corps in a racially diverse educational setting." We agree that "[i]t requires only a small step from this analysis to conclude that our country's other most selective institutions must remain both diverse and selective."[104]

The persuasiveness of this reasoning is apparent from the fact that the *Students for Fair Admissions* majority, as this Article discusses in greater detail below, omits military academies from its ruling.

Yet in ending affirmative action, the majority in *Students for Fair Admissions* ultimately looked to reliance, a factor traditionally considered when assessing whether a precedent should be overturned. The importance of reliance in this context is justified on the basis of two principles: (i) people form expectations about their legal rights and duties based on judicial decisions; and (ii) overturning precedent may upset these expectations and instigate societal disruption.[105] In *Students for Fair Admissions*, however, as we will discuss further below, the majority argued that it was unreasonable for universities to continue to rely on *Grutter* on the basis that "*Grutter* itself limited the reliance that could be placed upon it by insisting, over and over again, that race-based admissions programs be limited in time."[106] It is true that Justice O'Connor's

103 *Id.*
104 *Id.* at 331 (citations omitted).
105 Nina Varsava, *Precedent, Reliance, and* Dobbs, 136 HARV. L. REV. 1845, 1846 (2023).
106 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 38 n.9).

Grutter opinion is uncertain, even skeptical, of affirmative action policies relied upon by universities. Stating that "[a] core purpose of the Fourteenth Amendment was to do away with all governmentally imposed discrimination based on race,"[107] Justice O'Connor suggested that "race-conscious admissions policies must be limited in time" and identified a few means by which this could be ensured.[108]

> Enshrining a permanent justification for racial preferences would offend . . . fundamental equal protection principle[s]. We see no reason to exempt race-conscious admissions programs from the requirement that all governmental use of race must have a logical end point . . . . *In the context of higher education, the durational requirement can be met by sunset provisions in race-conscious admissions policies and periodic reviews to determine whether racial preferences are still necessary to achieve student body diversity*.[109]

After referring favorably to so-called "race-neutral alternatives,"[110] Justice O'Connor devoted the penultimate paragraph of the opinion to explaining when she expected affirmative action to no longer be necessary. In an often-quoted—and criticized[111]—statement, she wrote: "[The Court] expect[s] that 25 years from now, the use of racial preferences will no longer be necessary to further the interest approved today."[112] Far more than Justice O'Connor's elaboration of the diversity rationale, this "deadline" and her surrounding discussion animated the majority's stated reasoning in *Students for Fair Admissions*.

B. Students for Fair Admissions *and the Focus on the Twenty-Five Year "Deadline" in* Grutter

In their briefs, both Harvard and the University of North Carolina leaned heavily on the Court's precedents in *Bakke*, *Grutter*, and *Fisher II*.[113] Harvard

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107 *Grutter*, 539 U.S. at 341.

108 *Id.* at 342.

109 *Id.* (emphasis added).

110 *Id.*

111 *See, e.g.*, JEFFREY TOOBIN, THE NINE: INSIDE THE SECRET WORLD OF THE SUPREME COURT 263 (2007) ("The imposition of the time limit was O'Connor at her worst—and her best. To be sure, O'Connor was 'legislating from the bench,' in the accusatory term that conservatives like Bush used to describe activist judges. From the vague commands of the Constitution, she was extrapolating not just a legal rule but a deadline as well.").

112 *Grutter*, 539 U.S. at 343.

113 Brief for Petitioner, President & Fellows of Harv. Coll., *Students for Fair Admissions*, 600 U.S. at ____ (slip op.), at 21-41, available at https://www.scotusblog.com/case-files/cases/students-

extracted from *Bakke* and *Grutter* three reasons for recognizing diversity in higher education as a compelling interest. First, the country benefits from having leaders "trained through wide exposure" to diverse ideas, meaning that the "'path to leadership' must . . . 'be visibly open to talented and qualified individuals of every race and ethnicity,' to 'cultivate a set of leaders with legitimacy in the eyes of the citizenry.'"[114] Second, racial diversity can promote better learning outcomes by advancing "cross-racial understanding" and "break[ing] down racial stereotypes."[115] Third, racial diversity "is indispensable to some universities' educational missions."[116] Harvard also emphasized the lower courts' findings that "a heterogenous study body promotes a more robust academic environment with a greater depth and breadth of learning, encourages learning outside the classroom, and creates a richer sense of community."[117] The University of North Carolina reiterated most of these same reasons to support the conclusion that diversity in higher education is a compelling interest.[118]

However, this time, the Court did not adhere to its past precedents. The *Students for Fair Admissions* majority rejected the diversity rationale that had been affirmed repeatedly since *Bakke*. It found that the Court's precedents had identified just two compelling interests permitting a resort to race-based government action: "remediating specific, identified instances of past discrimination that violated the Constitution or a statute" and "avoiding imminent and serious risks to human safety in prisons." [119] Chief Justice Roberts described the interests put forth by the universities as "not sufficiently coherent for the purposes of strict scrutiny."[120]

> At the outset, it is unclear how courts are supposed to measure any of these goals. How is a court to know whether leaders have been adequately "train[ed]"; whether the exchange of ideas is "robust"; or whether "new knowledge" is being developed? Even if these goals could somehow be measured, moreover, how is a court to know when they have been reached, and when the perilous remedy of racial preferences may cease? There is no

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for-fair-admissions-inc-v-president-fellows-of-harvard-college/ [hereinafter Harvard Brief]; Brief for Petitioner, Univ. of N.C., *Students for Fair Admissions*, 600 U.S. at ____ (slip op.), at 26-47, https://www.scotusblog.com/case-files/cases/students-for-fair-admissions-inc-v-university-of-north-carolina/ [hereinafter University of North Carolina Brief].

114 Harvard Brief, *supra* note 113, at 29 (citing *Bakke*, 438 U.S. at 312-13; *Grutter*, 539 U.S. at 332).

115 *Id.* at 29-30 (citing *Grutter*, 539 U.S. at 330).

116 *Id.* at 30.

117 *Id.* at 31 (citation omitted).

118 University of North Carolina Brief, *supra* note 113, at 37-38.

119 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 15).

120 *Id.* at 23.

> particular point at which there exists sufficient "innovation and problem-solving," or students who are appropriately "engaged and productive."[121]

Notwithstanding the fact that these same interests had been recognized as compelling in *Grutter* just twenty years prior, Chief Justice Roberts rejected them in *Students for Fair Admissions* for the purposes of strict scrutiny on the basis of measurement difficulties. He further insisted, with little attempt to distinguish from *Grutter*, that the "admissions programs fail[ed] to articulate a meaningful connection between the means they employ and the goals they pursue," expressing particular concern about the imprecision of the racial categories.[122] Part of what appears to drive his reasoning here was a strong distrust of race operating as a stereotype. Reading *Grutter* to forbid admissions programs premised on the "belief that minority students always (or even consistently) express some characteristic minority viewpoint on any issue,"[123] the chief justice described race-conscious admissions policies as being centered around the idea of there being "an inherent benefit in race *qua* race—in race for race's sake."[124]

Yet what seemed to motivate Chief Justice Roberts' conclusion most strongly was the *Grutter* "requirement" that "race-based admissions programs . . . must end."[125] Indeed, in a rhetorical flourish similar to his famous admonition in *Parents Involved in Community Schools v. Seattle School District No. 1* ("The way to stop discrimination on the basis of race is to stop discriminating on the basis of race."),[126] he argued: "Eliminating racial discrimination means eliminating all of it."[127] Chief Justice Roberts asserted that "[t]he importance of an end point was not just a matter of repetition" but "the reason the Court was willing to dispense temporarily with the Constitution's unambiguous guarantee of equal protection."[128]

Justice Kavanaugh, concurring separately, even claimed that the very *holding* of *Grutter* included the deadline of twenty-five years on the basis that various members of the Court had referenced the twenty-five-year limit in their separate opinions in *Grutter*.[129] Although he acknowledged that "the effects of past racial discrimination still persist," Justice Kavanaugh argued that race-

121 *Id.* (citations omitted).
122 *Id.* at 24-25.
123 *Id.* at 28
124 *Id.* at 29.
125 *Id.* at 21.
126 551 U.S. 701, 748 (2007).
127 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 15).
128 *Id.* at 21.
129 *Id.* at 3 (Kavanaugh, J., concurring).

neutral admissions programs would constitute a sufficient means of ameliorating such harms.[130] Justice Kavanaugh, even more explicitly than Chief Justice Roberts in his majority opinion, insisted that *Students for Fair Admissions* was consistent with the Court's affirmative action precedents.[131] This perhaps explains Chief Justice Roberts' decision not to include language overruling *Grutter* outright.

The principal dissent, authored by Justice Sotomayor, aptly dismantles the premise that *Students for Fair Admissions* was a natural outgrowth of *Bakke* and *Grutter*. As she notes first, "[t]here is no better evidence that the Court is overruling the Court's precedents than those precedents themselves[;] '[e]very one of the arguments made by the majority can be found in the dissenting opinions filed in" *Grutter* and *Fisher II* by Chief Justice Roberts, Justice Alito, and Justice Thomas.[132] Viewing the diversity rationale as central to *Bakke* and its successor cases, Justice Sotomayor accused the majority of "singl[ing] out the limited use of race in holistic college admissions."[133]

> [This case] strikes at the heart of *Bakke*, *Grutter*, and *Fisher* by holding that racial diversity is an "inescapably imponderable" objective that cannot justify race-conscious affirmative action, even though respondents' objectives simply "mirror the 'compelling interest' this Court has approved" many times in the past. At bottom, without any new factual or legal justification, the Court overrides its longstanding holding that diversity in higher education is of compelling value.[134]

Emphasizing that the Court has recognized numerous equally or more amorphous interests as compelling for the purposes of strict scrutiny, Justice Sotomayor accused the majority of "pay[ing] lip service" to racial diversity.[135]

Justice Sotomayor also lambasted the majority for "[c]herry-picking language from *Grutter*" regarding the need for an expiration date to race-conscious admissions programs.[136] Interpreting the twenty-five years not as a firm deadline, but rather an "arbitrary number," Justice Sotomayor argued that *Grutter* merely required universities to periodically assess whether race-conscious programs were necessary to achieve the compelling diversity

130 *Id.* at 8 (Kavanaugh, J., concurring).
131 *Id.* (Kavanaugh, J., concurring).
132 *Id.* at 36 (Sotomayor, J., dissenting).
133 *Id.* at 41 (Sotomayor, J., dissenting).
134 *Id.* at 41-42 (Sotomayor, J., dissenting).
135 *Id.* at 42-43 (Sotomayor, J., dissenting).
136 *Id.* at 53 (Sotomayor, J., dissenting).

interests.[137] Reading *Grutter* the way that the majority did, Justice Sotomayor emphasized, was "based on the fiction that racial inequality has a predictable cutoff date."[138]

> Equality is an ongoing project in a society where racial inequality persists. A temporal requirement that rests on the fantasy that racial inequality will end at a predictable hour is illogical and unworkable. There is a sound reason why this Court's precedents have never imposed the majority's strict deadline: Institutions cannot predict the future. Speculating about a day when consideration of race will become unnecessary is arbitrary at best and frivolous at worst. There is no constitutional duty to engage in that type of shallow guesswork.[139]

In light of ongoing racial disparities across a wide range of areas,[140] this understanding of *Grutter* seems more appropriately flexible to a country still desperately trying to overcome a long history of systemic race-based violence and discrimination. But relying on both the conceded weakness of the diversity rationale instituted in *Bakke* and the lack of reliance interests stemming from the time limitation discussion in *Grutter*,[141] the majority in *Students for Fair Admissions* ended affirmative action programs in university admissions. Perhaps this decision was inevitable regardless of what exactly the Court in *Bakke* recognized as the compelling state interest, but one cannot help but wonder whether a holding more closely steeped in affirmative action as a mechanism to remediate the ongoing harms of racial discrimination would have been more compelling for the majority in *Students for Fair Admissions*. Indeed, particularly in the context of medical school admissions, there is an inextricable link between a lack of racial diversity and systemic racism in health care, a crucial issue that may be ignored through the lens of the narrowly focused diversity rationale. Indeed, because medical school admissions were not directly examined in *Students for Fair Admissions*, the majority overlooks the serious implications of its decision for the composition of the physician workforce. This highly important issue takes us back to *Bakke*.

137 *Id.* at 54 (Sotomayor, J., dissenting).
138 *Id.* (Sotomayor, J., dissenting).
139 *Id.* at 54-55 (Sotomayor, J., dissenting).
140 *See generally id.* at 1-29 (Jackson, J., dissenting).
141 *Id.* at 38 n.9.

IV. AFFIRMATIVE ACTION AND THE PHYSICIAN WORKFORCE

It is sometimes forgotten that *Bakke* was a case about a medical school.[142] As one example, in his important article published for a general audience in the *New York Review of Books* soon after the *Bakke* decision was announced, Ronald Dworkin mentioned the UC Davis Medical School in the second paragraph but never returned to it.[143] Yet in light of the increasingly diverse population of the United States, racial and ethnic diversity in medical schools and among the physician workforce has a profound effect on health care in the United States.[144] This Part will elaborate on some of the specific ways in which diversity in the medical context improves health care and argue that affirmative action has been an important, though imperfect, means of increasing diversity in medical schools (and thus the medical profession).

A. How Racial Biases and Misrepresentations Contribute to Racial Health Disparities in Medical Care

Back in 1966, Martin Luther King, Jr. emphasized: "Of all the forms of inequality, injustice in health is the most shocking and the most inhumane."[145] Stark racial and ethnic disparities in health care continue to persist in the United States to this day "virtually anywhere one might choose to look . . . . [w]hether it is premature birth, infant mortality, homicide, childhood obesity, or HIV infection, . . . [or] heart disease, diabetes, stroke, kidney failure, and cancer."[146]

Importantly, this phenomenon is caused not only because of unequal access to care,[147] but because of the "concrete" care itself.[148] According to a 2003 report

142 *See supra* note 12 and accompanying text.

143 Ronald Dworkin, *The* Bakke *Decision: Did It Decide Anything?*, N.Y. REV. (Aug. 17, 1978), https://www.nybooks.com/articles/1978/08/17/the-bakke-decision-did-it-decide-anything/.

144 *See infra* Section IV.A.

145 DAMON TWEEDY, BLACK MAN IN A WHITE COAT: A DOCTOR'S REFLECTIONS ON RACE AND MEDICINE 3-4 (2015).

146 *Id.* at 4. That there are significant racial disparities with respect to health care should be considered common knowledge, but the sources included here constitute particularly well-documented research in this respect. *See, e.g.*, JAMES N. WEINSTEIN ET AL., COMMUNITIES IN ACTION: PATHWAYS TO HEALTH EQUITY 57-99 (2017); SOFIA CARRATALA & CONNOR MAXWELL, HEALTH DISPARITIES BY RACE AND ETHNICITY (May 7, 2020), available at https://www.americanprogress.org/article/health-disparities-race-ethnicity/; DAYNA BOWEN MATTHEW, JUST MEDICINE: A CURE FOR RACIAL INEQUALITY IN AMERICAN HEALTHCARE (2015); Risa Lavizzo-Mourey & David Williams, *Being Black Is Bad for Your Health*, U.S. NEWS & WORLD REP. (Apr. 14, 2016), https://www.usnews.com/opinion/blogs/policy-dose/articles/2016-04-14/theres-a-huge-health-equity-gap-between-whites-and-minorities.

147 *See* Christen Linke Young, *There Are Clear, Race-Based Inequalities in Health Insurance and Health Outcomes*, BROOKINGS INST. (Feb. 19, 2020), https://www.brookings.edu/blog/usc-brookings-schaeffer-on-health-policy/2020/02/19/there-are-clear-race-based-inequalities-in-health-insurance-and-health-outcomes/; *see also Disparities in Health and Health Care Among Black*

by the Institute of Medicine (now called the National Academy of Medicine), "[r]acial and ethnic minorities tend to receive a lower quality of health [] care than non-minorities, even when access-related factors, such as patients' insurance status and income are controlled."[149] "Stereotyping, biases, and uncertainty on the part of health [] care providers can all contribute to unequal treatment."[150]

Various studies have affirmed the importance of implicit bias in medical care.[151] For example, Daylen Bowen Matthew has argued that unconscious biases held by health care providers contribute to racial disparities in health, as doctors, no different from others, have been consistently flooded with negative images, messages, and sentiments about people of color.[152] These messages then "automatically dominate and form into implicit biases concerning . . . individual patient[s]."[153]

> [W]ithout consciously thinking about it, the physician is likely to have made some implicit assumptions about his [Black] patient even before meeting her . . . . [T]he doctor may assume this patient has limited means, less education than himself, and has had few opportunities to take care to eat well, exercise, or rest over the course of her lifetime. Most likely, the physician will not even be aware that his judgments about the patient have been reached subconsciously . . . [b]ut the fact that this physician's assumptions and stereotypes—his implicit biases—are neither irrational nor consciously chosen, does not mean that the

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People, KAISER FAM. FOUND. (Feb. 24, 2022), https://www.kff.org/infographic/disparities-in-health-and-health-care-among-black-people/ (noting that the Affordable Care Act narrowed, but failed to eliminate, racial disparities in health coverage).

148 KHIARA M. BRIDGES, CRITICAL RACE THEORY: A PRIMER 335 (2019).

149 INST. OF MED., UNEQUAL TREATMENT: CONFRONTING RACIAL AND ETHNIC DISPARITIES IN HEALTH CARE 1 (Brian D. Smedley et al. eds., 2002).

150 *Id.*

151 *See* BRIDGES, *supra* note 148, at 135; *see, e.g.*, Michael Sun et al., *Negative Patient Descriptors: Documenting Racial Bias in the Electronic Health Record*, 41 HEALTH AFFS. 203 (2022); Gracie Himmelstein et al., *Examination of Stigmatizing Language in the Electronic Health Record*, 5 JAMA NETWORK OPEN (Jan. 27, 2022), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2788454; Chloë FitzGerald & Samia Hurst, *Implicit Bias in Healthcare Professionals: A Systematic Review*, 18 BMC MED. ETHICS (2017); William J. Hall et al., *Implicit Racial/Ethnic Bias Among Health Care Professionals and Its Influence on Health Care Outcomes: A Systematic Review*, 105 AM. J. PUB. HEALTH e60 (2015); Elizabeth N. Chapman et al., *Physicians and Implicit Bias: How Doctors May Unwittingly Perpetuate Health Care Disparities*, 28 J. GEN. INTERNAL MED. 1504 (2013); Irene V. Blair, John F. Steiner & Edward P. Havranek, *Unconscious (Implicit) Bias and Health Disparities: Where Do We Go From Here?*, 15 PERMANENTE J. 71 (2011).

152 MATTHEW, *supra* note 146, at 48.

153 *Id.* at 49.

> discrimination that arises from them will not be extremely harmful to his . . . patient's health.[154]

Similarly, an infamous 2016 study out of the University of Virginia revealed that nearly half of a sample of medical students and residents endorsed at least one false belief about the biological differences between Black and White patients (*e.g.*, "[B]lack people's skin is thicker than [W]hite people's skin."). These beliefs further correlated with racial bias in pain perception and treatment recommendation accuracy.[155]

Racial misrepresentations in medical schools also play a significant role in fomenting racial disparities in health care. A recent study published in the *New England Journal of Medicine* examined nearly nine hundred lectures from twenty-one courses in one particular medical school and found "five key domains in which educators misrepresent[ed] race in their discussions, interpretations of race-based data, and assessments of students' mastery of race-based science."[156] The domains were semantics, prevalence without context, race-based diagnostic bias, pathologizing race, and race-based clinical guidelines.[157]

In recent years especially, medical schools have attempted various strategies to advance health equity in medical education, ranging from implicit bias training[158] to supplementary curricula[159] in structural competency, cultural humility, and anti[-]racism.[160] Particularly with such initiatives in their nascent stage,[161] however, diversity in medical schools can play an important role in

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154 *Id.*

155 Kelly Hoffman et al., *Racial Bias in Pain Assessment and Treatment Recommendations, and False Beliefs About Biological Differences Between Blacks and Whites*, 113 PSYCH. & COGNITIVE SCIS. 4296, 4296 (2016).

156 Christine Amutah et al., *Misrepresenting Race — The Role of Medical Schools in Propagating Physician Bias*, 384 NEW ENG. J. MED. 872, 872 (Mar. 4, 2021), https://www.nejm.org/doi/full/10.1056/nejmms2025768. The authors "found similar misrepresentations of race" in their home institutions. *Id.*

157 *Id.* at 873, tbl. 1.

158 *See* Swapna Reddy, *Implicit Bias Curricula in Medical School: Student and Faculty Perspectives*, HEALTH AFFS. (Jan. 15, 2020), https://www.healthaffairs.org/do/10.1377/forefront.20200110.360375/full/; *see, e.g.*, Karen Nitkin, *New Anti-Bias Training at the School of Medicine*, JOHN HOPKINS MED. (Sept. 8, 2020), https://www.hopkinsmedicine.org/news/articles/new-bias-and-racism-training-at-the-school-of-medicine.

159 *See* Stacy Weiner, *Medical Schools Overhaul Curricula to Fight Inequities*, ASS'N OF AM. MED. COLLS. (May 25, 2021), https://www.aamc.org/news-insights/medical-schools-overhaul-curricula-fight-inequities; *see also* Sean Treacy-Abarca et al., *Enhancing Existing Medical School Curricula with an Innovative Healthcare Disparities Curriculum*, 21 BMC MED. EDUC. 613 (2021) (developing a "novel resource-conserving health [] care disparities curriculum to enhance existing medical school lectures").

160 Amutah et al., *supra* note 156, at 872.

161 *See* Nao Hagiwara et al., *A Call for Grounding Implicit Bias Training in Clinical and Translational Frameworks*, 395 LANCET 1457 (2020) (noting gaps in current implicit bias training);

reducing racial bias and misrepresentation in the medical context, in addition to advancing other important goals that can improve health care.

B. Advantages of a Diverse Medical School Class

With respect to combating racial biases and misrepresentations in medical education, a study published by the Arizona Medical Education Research Institute found that students drive the majority of discussions on diversity in medical schools.[162] Importantly, medical student activism has consistently "triggered new collaborations among students, faculty, and administrators to rethink how race is addressed in the medical curriculum."[163]

National protests against racial discrimination in police actions and beyond have had particular salience on college campuses. Because of the shifting terrain of pre-medical undergraduate education, in which students have been exposed to more history and sociology of medicine, current medical students are sometimes more aware than their professors of how racism manifests in medicine and medical education—including the intensifying scientific controversies regarding human genetic variation.[164]

Medical students specifically have played a crucial role in decolonizing the medical school curriculum.[165] As one example, efforts by two medical students at

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Jeffrey F. Milem et al., *The Important Role that Diverse Students Play in Shaping the Medical School Curriculum*, ARIZ. MED. EDUC. RSCH. INST., available at https://coe.arizona.edu/sites/default/files/Milem,O'Brien,Miner,Bryan,Castillo-Page,Schoolcraft(2012)-The_Important_Role_that_Diverse_Students_Play_in_Shaping_the_Medical_School_Curriculum.pdf (noting that students and family members described efforts to include diversity within the medical school curriculum as "minimal . . . at best").

162 Milem et al., *supra* note 161, at 3-4.

163 Lundy Braun & Barry Saunders, *Avoiding Racial Essentialism in Medical Science Curricula*, 19 AM. MED. ASS'N J. ETHICS 518, 518 (2017), https://journalofethics.ama-assn.org/article/avoiding-racial-essentialism-medical-science-curricula/2017-06.

164 *Id.*

165 *See* Deborah Fadoju, *Sounding the Alarm: Six Strategies for Medical Students to Champion Anti-Racism Advocacy*, DOVE PRESS (Jan. 18, 2021), https://www.dovepress.com/sounding-the-alarm-six-strategies-for-medical-students-to-champion-ant-peer-reviewed-fulltext-article-JHL; *see also* Sarah H.M. Wong et al., *'Decolonising the Medical Curriculum': Humanising Medicine Through Epistemic Pluralism, Cultural Safety and Critical Consciousness*, LON. REV. EDUC. (May 19, 2021), https://uclpress.scienceopen.com/hosted-document?doi=10.14324/LRE.19.1.16 (describing how students in the United Kingdom are at the forefront of efforts to decolonize the medical curriculum); Braden Hexom, *Beyond Medical School: The Frontier of Medical Activism*, AM. MED. ASS'N J. ETHICS (Jan. 2004), https://journalofethics.ama-assn.org/article/beyond-medical-school-frontier-medical-activism/2004-01 (noting efforts by medical students to change medical school curricula); *cf.* Merlin Chowkwanyun, *Biocitizenship on the Ground: Health Activism and the Medical Governance Revolution*, *in* BIOCITIZENSHIP: THE POLITICS OF BODIES, GOVERNANCE, AND POWER 178, 178-203 (Kelly E. Happe et al. eds., 2018) (discussing the history of medical student activism during the

the Yale School of Medicine encouraged the institution to incorporate a health equity trend into the curriculum, and "an art tour and reflection exploring the expression of bias in [W]estern culture and its impact on patient-provider interactions" is now required as part of the curriculum for first-year students.[166] Other medical schools have similarly changed their curriculum to ameliorate racial biases in health care in response to student activism.[167] Accusing the medical community of being "complicit in legitimizing claims of racial difference throughout the history of the United States," several medical students from the University of Washington School of Medicine argued that "[c]omprehensive reform in medical education" was "necessary to dismantle the remnants of [an] inherited racist system" and issued a series of recommendations aimed towards reforming the medical school curriculum.[168] All of this suggests that a diverse student body can push the medical school as a whole towards greater racial awareness and understanding.

Unsurprisingly, this phenomenon has positive effects beyond medical school. White students who attend more racially diverse medical schools are "more likely [than their counterparts] to rate themselves as highly prepared to care for minority populations and value equitable access to care more strongly."[169] In its amicus brief submitted on behalf of Harvard and the University of North Carolina, the Association of American Medical Colleges similarly recognized that diverse student populations can generate significant

civil rights and War on Poverty era, including debates over the narrowness of the curriculum).

166 Abigail Roth, *Medical Students Leave 'Indelible' Mark on the School's Curriculum*, YALE NEWS (May 11, 2018), https://news.yale.edu/2018/05/11/medical-students-leave-indelible-mark-schools-curriculum.

167 *See, e.g.*, Timothy M. Smith, *Rebuilding Medical Curricula to Treat Race as Social Construct*, AM. MED. ASS'N (Mar. 16, 2021), https://www.ama-assn.org/delivering-care/public-health/rebuilding-medical-curricula-treat-race-social-construct; Hafza Inshaar et al., *A Call for Curricular Reform: Recognising the Importance of Race-Based Medical Education*, *Racism and Bias*, 56 MED. EDUC. 1147 (2022); ICAHN SCH. OF MED. AT MT. SINAI, https://changenow.icahn.mssm.edu/race-bias/ (last visited Jan. 24, 2023).

168 Edwin Nieblas-Bedolla et al., *Changing How Race Is Portrayed in Medical Education: Recommendations from Medical Students*, 95 ACAD. MED. 1802 (2020).

169 Max Jordan Nguemeni Tiako et al., *Medical Schools as Racialized Organizations: How Race-Neutral Structures Sustain Racial Inequality in Medical Education — A Narrative Review*, 37 J. GEN. INTERNAL MED. 2259, 2263 (2022); *see also* Press Release, Univ. Cal. L.A., Diversity at Medical Schools Makes Stronger Doctors, Study Shows (Sept. 9, 2008), available at https://www.uclahealth.org/news/diversity-at-medical-schools-makes-stronger-doctors-study-shows (describing similar findings in research conducted at the University of California, Los Angeles). To clarify, this Article does not seek to advance the offensive suggestion that the purpose of diversity is to improve the education of White students. Underrepresented minority students should and do attend medical school for the same reason as all other students—to become the very best doctors they can and ultimately provide the very best care for their patients, irrespective of their patients' race. The purpose of highlighting these findings is to aid the argument that the diversity rationale is a sufficiently strong state interest to justify affirmative action in the medical school context.

gains for health care.

> [M]edical educators have learned—through both scientific research and years of experience—that health disparities can be minimized when professionals have learned and worked next to colleagues of different racial and ethnic backgrounds in environments that reflect the ever-increasing diversity of the society the profession serves. Thus, diversity in medical education yields better health outcomes not just because minority professionals are often more willing to serve (and often very effective at serving) minority communities, but *because* ***all*** *physicians become better practitioners overall as a result of a diverse working and learning environment*.[170]

In short, the evidence suggests that diversity produces better medical students, more attuned to their racial biases and misinformation in their medical curricula. These medical students, of course, subsequently become doctors who are better equipped to understand the health care needs of diverse patient populations.

Admitting diverse medical school classes improves health care in other ways as well. First, for some patients, particularly those from minority groups, the race or ethnicity of their physician may be an important factor.[171] In fact, racial/ethnic correspondence between patient and physician has been found to promote better communication, trust, and clinical outcomes.[172] Second, diversity can boost creativity and innovation in the medical context.[173] Third, there is ample evidence that physicians from historically marginalized groups are more likely to work with medically underserved communities, which can markedly improve health care access.[174]

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170 Brief for Association of American Medical Colleges et al. as Amici Curiae Supporting Respondents, *Students for Fair Admissions*, 600 U.S. at ____ (slip op.), at 5 (emphasis added).

171 *See* Junko Takeshita et al., *Association of Racial/Ethnic and Gender Concordance Between Patients and Physicians with Patient Experience Ratings*, JAMA NETWORK OPEN (Nov. 9, 2020); Thomas A. Laveist & Amani Nuru-Jeter, *Is Doctor-Patient Race Concordance Associated with Greater Satisfaction with Care?*, 43 J. HEALTH SOC. BEHAVIOR 296 (2002).

172 *See* Marcella Alsan et al., Does Diversity Matter for Health? Experimental Evidence from Oakland (Nat'l Bureau of Econ. Rsch., Working Paper No. 24787, 2018); Takeshita et al., *supra* note 171.

173 *See* Talia H. Swartz et al., *The Science and Value of Diversity: Closing the Gaps in Our Understanding of Inclusion and Diversity*, 220 J. INFECTIOUS DISEASES S33 (2019); Quin Capers IV et al., *The Urgent and Ongoing Need for Diversity, Inclusion, and Equity in the Cardiology Workforce in the United States*, 10 J. AM. HEART ASS'N (2021).

174 *See* Capers IV et al., *supra* note 173; Andrea N. Garcia et al., *Factors Associated with Medical School Graduates' Intention to Work with Underserved Populations: Policy Implications*

In *Bakke*, Justice Powell did assume that "in some situations a State's interest in facilitating the health care of its citizens is sufficiently compelling to support the use of a suspect classification" but rejected this argument merely because the record contained "virtually no evidence" that the admissions policy further this interest.[175] The amicus brief submitted by several states on behalf of Harvard and the University of North Carolina summarizes several benefits. "[T]he States now well know from abundant research the myriad ways in which medical student and clinician diversity leads to improved health outcomes, health [] care access, and patient satisfaction for patients from persistently burdened, medically underserved communities."[176]

Notably, both Justice Sotomayor and Justice Jackson incorporated discussion on health disparities in their dissents, particularly the latter.

> Health gaps track financial ones. When tested, Black children have blood lead levels that are twice the rate of White children—"irreversible" contamination working irremediable harm on developing brains. Black (and Latino) children with heart conditions are more likely to die than their White counterparts. Race-linked mortality-rate disparity has also persisted, and is highest among infants.
>
> So, too, for adults: Black men are twice as likely to die from prostate cancer as White men and have lower [five]-year cancer survival rates. Uterine cancer has spiked in recent years among all women—but has spiked highest for Black women, who die of uterine cancer at nearly twice the rate of "any other racial or ethnic group." Black mothers are up to four times more likely than White mothers to die as a result of childbirth. And COVID[-19] killed Black Americans at higher rates than White Americans.
>
> "Across the board, Black Americans experience the highest rates of obesity, hypertension, maternal mortality, infant mortality, stroke, and asthma." These and other disparities—the predictable result of opportunity disparities—lead to at least 50,000 excess deaths a year for Black Americans vis-à-vis White Americans. That is [eighty] million excess years of life lost from just 1999 through 2020.

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for Advancing Workforce Diversity, 93 ACAD. MED. 82 (2018).

175 *Bakke*, 438 U.S. at 310.

176 Brief for Massachusetts et al. as Amici Curiae Supporting Respondents, *Students for Fair Admissions*, 600 U.S. at ____ (slip op.), at 10-11.

> *Amici* tell us that "race-linked health inequities pervad[e] nearly every index of human health" resulting "in an overall reduced life expectancy for racial and ethnic minorities that cannot be explained by genetics." Meanwhile—tying health and wealth together—while she lays dying, the typical Black American "pay[s] more for medical care and incur[s] more medical debt."[177]

All of this suggests that it is not "inescapably imponderable" interests that justify a diverse medical student population, but well-established advantages for medical students that translate into robust, concrete health benefits for the population at large, particularly historically marginalized groups. It is even more true now than in *Bakke* that diversity in medical school admissions is a compelling state interest for constitutional purposes.

C. Reparations versus Diversity Rationale in Bakke*: The Mixed Effect of Affirmative Action in Medical Schools Since* Bakke

In *Bakke*, the UC Davis School of Medicine recognized that a diverse physician workforce was a compelling national interest and that the appalling history of racial discrimination in the United States curtailed the realization of this important objective.[178] Underrepresented minorities did not historically have opportunities to attend medical school, which led the medical school to implement its plan to reserve sixteen seats in each class for underrepresented minority students.

Although Justice Powell did permit affirmative action—and diversity is clearly compelling in the medical school context—viewed in hindsight, it is unfortunate that he so strongly opposed the reparations rationale, which is perhaps a more compelling logical and rhetorical idea than diversity. While the absolute number of physicians from minority racial and ethnic groups has increased over time, the physician workforce does not currently match the demographics of the population of the United States.[179] Data from the Association of American Medical Colleges from 2021 on the racial and ethnic composition of medical school enrollees are as follows[180]:

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177 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 13-14) (Jackson, J., dissenting) (citations omitted).

178 *Bakke* Brief for Petitioner, *supra* note 21, at *32-33; Reply Brief for Petitioner, *Bakke*, 438 U.S. (No. 76-811), 1977 WL 187980, at *2.

179 Elle Lett et al., *Trends in Racial/Ethnic Representation Among U.S. Medical Students*, JAMA NETWORK OPEN (Sept. 4, 2019), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2749233.

180 Ass'n of Am. Med. Colls., *2021 Fall Applicant, Matriculant, and Enrollment Data Tables*

American Indian/Alaska Native	1.1%
Asian	26.8%
Black/African American	9.7%
Hispanic, Latino, Spanish	11.8%
White	55.4%

With affirmative action admissions policies now ended, the situation will likely only worsen. Two empirical studies have examined changes in the numbers of underrepresented minority medical students before and after state-initiated bans on affirmative action in higher education. In the first, medical school matriculation rates were examined before and after six state-level affirmative action bans were instituted (California, Washington, Florida, Texas, Michigan, and Nebraska). Following the implementation of the bans, matriculation rates for underrepresented minority students in public medical schools declined by 17.2%.[181] In a second empirical study, twenty-one public medical schools in eight states that implemented affirmative action bans were matched to control schools in states without bans. Following the implementation of the bans, the percentage of underrepresented minority students decreased from 14.8% to 10.0%, a 32% decrease, compared with a slight increase in the control schools.[182]

These two studies raise the concern that this national ban on affirmative action programs in higher education may significantly reduce the number of underrepresented minority students in medical schools, which would eventually translate into even lower rates of diversity among the physician workforce in the United States.

V. CONCLUSION

The outcome of *Students for Fair Admissions* is disappointing, but it is largely not surprising to knowledgeable observers of the Court. Yet one notable instance in which the majority demonstrates at least some recognition of the potential consequences of this holding is footnote four in the majority opinion.[183]

(Dec. 2021), https://www.aamc.org/media/57761/download?attachment.

181 Liliana M. Garces & David Mickey-Pabello, *Racial Diversity in the Medical Profession: The Impact of Affirmative Action Bans on Underrepresented Student of Color Matriculation in Medical Schools*, 86 J. HIGHER EDUC. 264 (2015).

182 Dan P. Ly, *Affirmative Action Bans and Enrollment of Students from Underrepresented Racial and Ethnic Groups in U.S. Public Medical Schools*, 175 ANNALS OF INTERNAL MED. 873 (2022).

183 *See, e.g.*, Charlie Savage, *Highlights of the Affirmative Action Opinions and Dissents*,

> The United States as *amicus curiae* contends that race-based admissions programs further compelling interests at our Nation's military academies. No military academy is a party to these cases, however, and none of the courts below addressed the propriety of race-based admissions systems in that context. This opinion also does not address the issue, in light of the potentially distinct interests that military academies may present.[184]

Certainly, there is much to criticize about this footnote, and Justice Jackson does so in a particularly astute and stinging manner.[185] Yet this potentially leaves open, perhaps just a crack, contexts in which race-based admissions systems might present uniquely compelling interests that justify the continuation of affirmative action. Even if the Court deems diversity as presenting overly nebulous interests in the undergraduate context, the analysis presented herein makes clear that medical school interests are distinct—justifying the continued use of race-conscious admissions in medical schools, even in the wake of *Students for Fair Admissions*.

We acknowledge, though, that this is an unlikely prospect; the majority, after all, consistently refers to its analysis as encompassing higher education admissions programs generally and expressly identifies only military academies as having "potentially distinct interests."[186] So, for medical schools committed to educating a diverse physician workforce prepared to meet the health care needs of an increasingly diverse society, the stakes could not be higher, and there is no time to lose. Medical schools, and all institutions of higher learning, must begin to prepare alternative strategies to ensure an education system that promotes racial diversity. Richard Kahlenberg, who served as an expert witness on behalf of Students for Fair Admissions, has noted that universities prohibited from using race-conscious admissions systems "have adopted an array of progressive policies that indirectly promote racial diversity," including "increas[ing] financial-aid budgets, tak[ing] top-ranking students from high schools in poor communities, dropp[ing] the use of legacy preferences, and increas[ing] admission of students who transfer from community colleges.[187] Others have

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N.Y. TIMES (June 29, 2023), https://www.nytimes.com/2023/06/29/us/politics/affirmative-action-ruling-highlights.html.

184 *Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 22 n.4).

185 *Id.* at 29 (Jackson, J., dissenting). She writes: "The Court has come to rest on the bottom-line conclusion that racial diversity in higher education is only worth potentially preserving insofar as it might be needed to prepare Black Americans and other underrepresented minorities for success in the bunker, not the boardroom (a particularly awkward place to land, in light of the history the majority opts to ignore)."

186 *Id.* at 22 n.4.

187 Richard D. Kahlenberg, *The Affirmative Action that Colleges Really Need*, ATLANTIC

proposed the increased use of pathway programs, or partnerships between a medical school and an undergraduate institution that prepare underrepresented pre-medical school students to become competitive applicants,[188] and incorporating mentorship structures for potential medical professionals.[189] Importantly, many of the members of the *Students for Fair Admissions* majority seem open to these types of strategies.[190] While these may be imperfect solutions for ensuring that underrepresented minority students continue to have the opportunity to matriculate at institutions of higher learning, such institutions must begin contemplating how to attain diverse student bodies immediately. The wealth of our economy, the health of our citizens, and the soul of our country are at stake.

(Oct. 26, 2022), https://www.theatlantic.com/ideas/archive/2022/10/supreme-court-harvard-affirmative-action-legacy-admissions-equity/671869/.

188 Roy H. Hamilton, Suzanne Rose & Horace M. DeLisser, *Defending Racial and Ethnic Diversity in Undergraduate and Medical School Admission Policies*, JAMA NETWORK (Dec. 7, 2022), https://jamanetwork.com/journals/jama/fullarticle/2799539.

189 *See* Brendan Murphy, *Boost for 3 Big Ideas to Improve Diversity in Medical Education*, AM. MED. ASS'N (Nov. 9, 2021), https://www.ama-assn.org/education/medical-school-diversity/boost-3-big-ideas-improve-diversity-medical-education.

190 *See Students for Fair Admissions*, 600 U.S. at ____ (slip op., at 51, 53, 55-56) (Thomas, J., concurring); *id.* at 14 n.4 (Gorsuch, J., concurring); *id.* at 8 (Kavanaugh, J., concurring). Ominously, though, there is little doubt that many of these approaches that do not explicitly consider race will also face intensive legal scrutiny. At the end of May, the Fourth Circuit narrowly upheld a new admissions process at a prestigious public high school in Virginia that had replaced its admissions exam with an essay and begun assigning weight to poorer students and those learning English. *See* Coal. for T.J. v. Fairfax Cnty. Sch. Bd., 68 F.4th 864 (4th Cir. 2023). Professor Jeannie Suk Gersen, a Harvard Law School professor, has warned that the next legal battles are likely to be over deemphasizing test scores or boosting applicants from poorly funded high schools. Even mechanisms like the Top Ten Percent Plan in Texas may be vulnerable. Jeannie Suk Gersen, *After Affirmative Action Ends*, NEW YORKER (June 26, 2023), https://www.newyorker.com/news/daily-comment/after-affirmative-action-ends.

The Fall of FDA Review

Daniel G. Aaron*

Abstract:

The U.S. Food and Drug Administration (FDA) is in crisis. FDA can hardly go a single day without an investigation, negative news story, or scholarly critique of the agency's work. We have increasingly entrusted FDA—today, to the tune of 25% of the U.S. economy—with vetting the products we put in and on our bodies. But the array of problems facing the agency raises questions about whether it is equipped to succeed in the 21st century.

FDA's core function is to oversee a special legal regime called "premarket review." Congress has prohibited all marketing of certain types of products (like drugs) until FDA reviews and approves an application from the manufacturer. This system allows consumers to depend on the foods they ingest, the pills they swallow, and the health care they receive—in theory. But critics have documented how FDA review failures have produced, or contributed to, public health crises, including those related to opioids, e-cigarettes, trans fats, sugar, and, most recently, the COVID-19 pandemic.

Leveraging five FDA product areas, this Article argues that premarket review is faltering. The reasons vary somewhat across FDA's regulatory regimes. However, the bottom line is the same: longstanding efforts to undermine FDA governance by corporations and financial power writ large. Corporate deregulatory efforts have operated through courts, Congress, the President, and the agency's leadership itself. In some cases, premarket review has been so hollowed out that all that remains is the illusion of regulation, nothing more. These developments reflect the ascendancy of neoliberalism, a system in which core social guarantees devolve to decisions by individual consumers.

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We need not accept this state of affairs. Learning from the mechanisms behind premarket review's erosion, this Article proposes a suite of structural solutions to build a revitalized FDA: one that is dutifully empowered, inside and out, to safeguard the public health.

INTRODUCTION

Laurie asked her son for a bite of his apple. Puzzled, he asked why—she hated apples. "I'm tasting metal again." For several months a metal taste had crept across her tongue into the corners of her mouth. Her son was concerned. Through doctors' appointments, Laurie learned she had elevated levels of multiple metal ions in her blood. Doctors traced these ions to her metal-on-metal hip replacement, which had a ball and socket made of metal. The metal-on-metal hip had been advertised to her as offering an easier surgery with quicker recovery. Yet over the years, it was revealed that patients with metal-on-metal hips suffered pain, metal taste in their mouths, cognitive losses, and other problems stemming from heavy metals in the bloodstream.[1] Laurie had been experiencing memory loss, brain fog, and difficulty processing information. Her device was soon recalled, requiring another hip replacement just to remove the defective device.[2] Laurie has cognitive symptoms to this day. Laurie is my mother, and I shared the apple with her.

How did such a dangerous device clear the U.S. Food and Drug Administration's (FDA's) regulatory hurdles to come to market? Not through traditional FDA review. Instead, despite a new design and new materials, FDA cleared it as "substantially equivalent" to prior models, thus avoiding the premarket approval process.[3]

Premarket review is a regulatory system with significant public cachet. Though most Americans would not know premarket review by name, we generally consume items like foods and drugs with some assumptions about their quality. FDA stands for the guarantee that these items will help us, will nourish us, will not kill us.

However, experts have increasingly observed gaps in premarket review.[4]

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1 Carl Heneghan et al., *Ongoing Problems with Metal-on-Metal Hip Implants*, BMJ, Feb. 28, 2012, at 1.

2 She received a more traditional ceramic hip. *See* Stephen Richard Knight, *Total Hip Arthroplasty—Over 100 Years of Operative History*, 3 ORTHOPEDIC REVS. 72, 73 (2011).

3 Brent M. Ardaugh, Stephen E. Graves & Rita F. Redberg, *The 510(k) Ancestry of a Metal-on-Metal Hip Implant*, 368 NEW ENG. J. MED. 97, 97 (2013); Heneghan et al., *supra* note 1, at 2.

4 *See, e.g.*, Peter Barton Hutt, *The State of Science at the Food and Drug Administration*, 60 ADMIN. L. REV. 431, 432 (2008) ("In terms of both personnel and the money to support them, the agency is barely hanging on by its fingertips."); Mason Marks, *Automating FDA Regulation*, 71 DUKE L.J. 1207, 1279 (2022); Daniel G. Aaron, *Tobacco Reborn: The Rise of E-Cigarettes and Regulatory Approaches*, 25 LEWIS & CLARK L. REV. 827 (2021); Donald W. Light, Joel Lexchin & Jonathan J. Darrow, *Institutional Corruption of Pharmaceuticals and the Myth of Safe and Effective Drugs*, 41 J. L., MED & ETHICS 590 (2013); Ezekiel J. Emanuel, *A Middle Ground for Accelerated Drug Approval—Lessons From Aducanumab*, 326 JAMA 1367 (2021); Alexandra Maulden, *Ignoring the Experts: Implications of the FDA's Aduhelm Approval*, 48 AM. J. L. & MED. 108 (2022); Jerry Avorn & Aaron S. Kesselheim, *Up Is Down — Pharmaceutical Industry Caution vs.*

These critiques have described how premarket review failures have produced, or contributed to, some of the largest public health crises of the day. Many premarket review stories have reached popular media. Elizabeth Holmes of Theranos skirted FDA approval of a blood-testing device.[5] Purdue Pharma's OxyContin, after being approved on a thin reed of evidence, ignited the opioid crisis.[6] Vaping companies have addicted scores of U.S. youth under FDA's watch.[7] Other modern crises to which premarket review has contributed include multiple tobacco epidemics, the obesity epidemic, and the COVID-19 pandemic. Table 1 provides examples of products within FDA's premarket areas that have nonetheless caused an alarming number of deaths. Over the past ten years, FDA has announced investigations into broad swaths of its regulatory portfolio, suggesting it is well aware of the structural cracking of premarket review.[8]

Federal Acceleration of Covid-19 Vaccine Approval, 383 NEW ENG. J. MED. 1706 (2020); Aaron P. Mitchell, Niti U. Trivedi & Peter B. Bach, *The Prescription Drug User Fee Act: Much More Than User Fees*, 60 MED. CARE 287 (2022); Matthew Herder, *Pharmaceutical Drugs of Uncertain Value, Lifecycle Regulation at the US Food and Drug Administration, and Institutional Incumbency*, 97 MILBANK Q. 820 (2019); Jonathan J. Darrow, Jerry Avorn & Aaron S. Kesselheim, *FDA Regulation and Approval of Medical Devices: 1976-2020*, 326 JAMA 420 (2021); William Chanes Martinez, *Attack of the Clones: An Examination and Critique of FDA's Medical Device Regulatory Scheme*, 15 TENN. J. L. & POL'Y 344 (2021); Benjamin N. Rome et al., *FDA Approval of Cardiac Implantable Electronic Devices via Original and Supplement Premarket Approval Pathways, 1979-2012*, 311 JAMA 385, 385 (2014); Cameron Faustman et al., *Ten Years Post-GAO Assessment, FDA Remains Uninformed of Potentially Harmful GRAS Substances in Foods*, 61 CRITICAL REVS. IN FOOD SCI. & NUTRITION 1260 (2020); Laurie J. Beyranevand, *Generally Recognized as Safe?: Analyzing Flaws in the FDA's Approach to GRAS Additives*, 37 VT. L. REV. 887 (2013); Andrew Kolodny, *How FDA Failures Contributed to the Opioid Crisis*, 22 AMA J. ETHICS 743 (2020); Yaniv Heled, Ana Santos Rutschman & Liza Vertinsky, *Regulatory Reactivity: FDA and the Response to COVID-19*, 76 FOOD & DRUG L.J. 318 (2021).

5 O. Hayden Griffin III, *Promises, Deceit and White-Collar Criminality Within the Theranos Scandal*, J. WHITE COLLAR & CORP. CRIME, Sept. 2, 2020, at 7.

6 *See infra* notes 257–257

7 *See infra* Section II.C.2.

8 In 2018, FDA announced it was overhauling its medical device review program to respond to new evidence of public health harms from devices. *FDA Vows to Overhaul Decades-Old System for Approving Medical Devices*, CBS (Nov. 26, 2018), https://www.cbsnews.com/news/fda-vows-to-overhaul-decades-old-medical-device-system-today-2018-11-26. In July 2022, FDA announced it would "conduct a comprehensive evaluation" for its entire food *and* tobacco programs. *FDA Conducting Evaluation of Key Agency Activities to Strengthen Operations*, U.S. FOOD & DRUG ADMIN. (July 19, 2022), https://www.fda.gov/news-events/press-announcements/fda-conducting-evaluation-key-agency-activities-strengthen-operations. In August 2022, FDA declared that it was reviewing its prior opioid decisions and hoping to learn from its mistakes. *FDA's Overdose Prevention Framework Aims to Prevent Drug Overdoses and Reduce Death*, U.S. FOOD & DRUG ADMIN. (Aug. 30, 2022), https://www.fda.gov/news-events/fda-voices/fdas-overdose-prevention-framework-aims-prevent-drug-overdoses-and-reduce-death. In addition, FDA's regulation of medical products has been on the Government Accountability Office's (GAO's) high-risk list since 2009, a serious designation for issue-laden federal programs. *Protecting Public Health Through Enhanced Oversight of Medical Products*, GOV'T ACCOUNTABILITY OFF. (Accessed Sept. 3, 2022),

Though scholarly critiques of premarket review exist, most authors target a distinct area of law, such as foods or devices.[9] This Article is the first to examine premarket review across FDA's product areas to synthesize conclusions about the effectiveness of premarket review as a legal regime.[10]

Health Threat	Category of Premarket Review	Time Period of Data	Number of Deaths Attributable to Threat	Ref.
Opioids	Drugs	1999–2020	>500,000	[11]
Trans Fats	Food Additives[12]	2003–2014	>84,000	[13]
Vioxx (Rofecoxib)	Drugs	1999–2004	56,000	[14]
Sleeping Pills	Drugs	Around 2010	320,000–507,000/year[15]	[16]
Sugar-Sweetened Drinks	Food Additives	2012	>51,694/year	[17]
Salt	Food Additives	Around 2014	57,578/year	[18]

https://www.gao.gov/highrisk/protecting-public-health-through-enhanced-oversight-medical-products. However, it is true GAO has recently appeared to narrow its high-risk designation for FDA. *Id.*

9 *See supra* note 4.

10 Adam I. Muchmore has compared FDA's authorization pathways using a more theoretical lens. Adam I. Muchmore, *Marketing Authorization at the FDA: Paradigms and Alternatives*, 74 ADMIN. L. REV. 539 (2022).

11 Daniel G. Aaron, *Public Health in the Opioid Litigation*, 53 LOY. U. CHI. L. REV. 11, 17 (2021). This figure includes deaths due to illicit opioids, too, given the illicit component of the current opioid crisis was precipitated by prescription opioids. *Id.* at 21–22. The toll of prescription opioids alone is more than 263,000. *Drug Overdose*, CTRS. FOR DISEASE CONTROL & PREVENTION (May 18, 2022), https://www.cdc.gov/drugoverdose/deaths/prescription/overview.html.

12 "Food additives" per its plain meaning, not the statutory definition.

13 *See* Faustman et al., *supra* note 4, at 1262.

14 Thomas H. Maugh, *Banned Report on Vioxx Published*, L.A. TIMES (Jan. 25, 2005), https://www.latimes.com/archives/la-xpm-2005-jan-25-sci-vioxx25-story.html.

15 The source notes this estimate is rough, but this value would be significant even if lower. Daniel F. Kripke et al., *Hypnotics' Association with Mortality or Cancer: A Matched Cohort Study*, BMJ OPEN, Feb. 27, 2012, at 1, 6.

16 *Id.*

17 Renata Micha et al., *Association Between Dietary Factors and Mortality from Heart Disease, Stroke, and Type 2 Diabetes in the United States*, 317 JAMA 912, 916–17 (2017).

18 Dariush Mozaffarian et al., *Global Sodium Consumption and Death from Cardiovascular Causes*, 371 NEW ENG. J. MED. 624, supp. at 54 (2014).

Medical Devices, generally	Devices	2008–2017	83,000	[19]
Drug Adverse Events	Drugs	Around 2011	128,000/year	[20]
Cigarettes	Tobacco Products	2009–2022	>480,000/year	[21]

Table 1: Deaths arguably caused, at least in part, by faltering premarket review.[22] If this table included illness and injuries, the toll would be far more, and other products would be included.

This Article makes the unnerving claim that premarket review is crumbling—and we are losing its attendant public health benefits. Part II substantiates this claim across five FDA regulatory areas, showing that premarket review is dramatically weakened, and, in some cases, near-eliminated for certain classes of products.

What explains the fall? The traditional story is that the weakening of premarket review reflects the intentional embrace of "lifecycle" approaches, in which FDA shifts its regulation *postmarket* because it allows faster patient access concurrent with regulatory study.[23] However, this story does not hold up as a matter of regulatory history. Rather, I point largely to corporate power. Lessons from five FDA regulatory regimes bear out an analytical framework demonstrating how corporate influence eroded premarket review using five structural mechanisms: (1) the president, (2) Congress, (3) courts, (4) resource control, and (5) ideological capture.[24] These elements worked in concert, though in different ways for different FDA programs, to erode the core promise that FDA will evaluate products intimately connected to human life before they enter the market.

19 *Medical Devices Harm Patients Worldwide as Governments Fail on Safety*, INT'L CONSORTIUM OF INVESTIGATIVE JOURNALISTS (Nov. 25, 2018), https://www.icij.org/investigations/implant-files/medical-devices-harm-patients-worldwide-as-governments-fail-on-safety.

20 Light et al., *supra* note 4, at 593. Many of these drug adverse events may be unavoidable, but even a fraction of these annual deaths raises serious concerns.

21 *Tobacco-Related Mortality*, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 28, 2020), https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/index.htm.

22 Does not indicate sole cause, but many or most of these deaths would likely have been avoided if premarket review were operating well. The table also does not indicate that FDA was responsible for these failures.

23 Holly Fernandez Lynch & I. Glenn Cohen, *Introduction*, *in* FDA IN THE 21ST CENTURY: THE CHALLENGES OF REGULATING DRUGS AND NEW TECHNOLOGIES 1, 9–10 (Holly Fernandez Lynch and I. Glenn Cohen eds., 2015); Herder, *supra* note 4, at 820.

24 *See infra* Figure 1.

Throughout this paper, I highlight the serious consequences of premarket review's fall. As Part III explains, FDA scholars have acknowledged premarket review's role not just in public health, but also in requiring product manufacturers to generate reliable information about the utility of their products. In fact, the evidentiary basis for our medical system—the information doctors need to diagnose and treat patients—depends on FDA. Premarket review's erosion breeds a less reliable market, which costs billions of dollars in wasted payments, engenders mistrust of our government, and disrupts innovation by inundating markets with low-value products.[25]

We need not live with the status quo. Drawing from the reasons behind premarket review's fall, Part IV offers cross-substantive solutions to repair it moving forward. Predictable but important solutions include infusing FDA with sorely needed funding and repairing statutory loopholes. More broadly, this Article identifies the use of enforcement discretion as a core problem that interferes with premarket review. That is, if FDA does not take legal enforcement action, it can nullify statutory requirements for premarket review through inaction. I advance granting FDA independent litigating authority to insulate enforcement decisions from the U.S. Department of Justice, which controls most federal law enforcement. In addition, it is high time for Congress to curb FDA's enforcement discretion by laying out a statutory framework that does not depend on FDA's goodwill for enforcement. Premarket review is statutorily required, and FDA should not be able to easily part with it by administrative fiat.

This Article makes one additional contribution: situating premarket review's erosion in what some scholars have described as neoliberalism.[26] Neoliberalism is a mode of governance that erodes core social guarantees in favor of market ordering.[27] This idea carries significant explanatory power as to why important scientific decisions intended to be made by FDA are devolving to individual consumers. I do not use neoliberalism purely in an ideological sense, but rather, to refer to systems where individual decisions—about which products work and are safe—replace government guarantees. Throughout this Article, I illustrate how corporate power has driven FDA's adoption of market-driven approaches to

25 *See infra* Section III.A.

26 *See, e.g.*, Jedediah Britton-Purdy et al., *Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. 1784 (2020); Kate Andrias & Benjamin I. Sachs, *Constructing Countervailing Power: Law and Organizing in an Era of Political Inequality*, 130 YALE L.J. 546 (2021); David Singh Grewal & Jedediah Purdy, *Introduction: Law and Neoliberalism*, 77 LAW & CONTEMP. PROBS. 1 (2014); Tayyab Mahmud, *Debt and Discipline: Neoliberal Political Economy and the Working Classes*, 101 KY. L.J. 1 (2013); Amy Kapczynski, *The Lochnerized First Amendment and the FDA: Toward a More Democratic Political Economy*, 118 COLUM. L. REV. ONLINE 179, 189 & n.66 (2018); DAVID HARVEY, A BRIEF HISTORY OF NEOLIBERALISM (2018).

27 Britton-Purdy et al., *supra* note 26, at 1789 n.21.

regulation. Understanding these mechanisms leads to a more robust solution set for restoring FDA's ability to respond to the panoply of public health crises facing the United States in the years and decades to come.

Now is the time for a reorientation of legal scholars' understanding of FDA. Only by grappling with the real-world influences on FDA can we understand this secretive institution and attempt to repair it.

I. THE RISE OF FDA REVIEW

This part offers the building blocks needed to understand premarket review. Briefly, it will discuss premarket review's rise, the role of FDA review, and the concept of neoliberalism in the FDA context.

A. Premarket Review

FDA was born in an era of broad public awakening about corporations selling fraudulent and unsafe foods and drugs.[28] Crisis after crisis in public health led Congress to steadily entrust FDA with increasing power over products intimately connected with human welfare.[29] However, premarket review largely did not exist until 1938;[30] before then, companies inventing new drugs, potions, or elixirs could simply bring them to market. Of course, FDA had some enforcement powers, but they were postmarket in nature.[31]

In 1937, the elixir sulfanilamide disaster, involving mass poisonings due to use of the solvent diethylene glycol in a therapeutic potion, killed more than 100 people in 15 states.[32] This suggested to Congress that if FDA assessed products before sale, FDA could prevent harms rather than respond to them.[33] In 1938, Congress vested FDA with a gatekeeping role over new drugs to ensure they were safe before marketing.[34] The Federal Food, Drug and Cosmetic Act (FDCA) of 1938, together with later amendments, gave birth to modern premarket review.[35] And over the next 80 years, FDA gained increasing authority over an array of product categories. Rising concerns about industrially produced chemicals in foods in the 1950s, which were transforming the American diet, led

28 *See* Kapczynski, *supra* note 26, at 183.

29 *See* Robert M. Califf, *Now Is the Time to Fix the Evidence Generation System*, CLINICAL TRIALS, Jan. 17, 2023, at 1, 3.

30 The exception is for biologics. Biologics Control Act of 1902, Pub L. No. 57-244.

31 Richard A. Merrill, *The Architecture of Government Regulation of Medical Products*, 82 VA. L. REV. 1753, 1761 (1996).

32 *Id.*; Carol Ballentine, *Sulfanilamide Disaster*, FDA CONSUMER (June 1981), https://www.fda.gov/files/about%20fda/published/The-Sulfanilamide-Disaster.pdf.

33 Merrill, *supra* note 31, at 1761.

34 *Id.* at 1761–62.

35 *Id.*

Congress to vest FDA with premarket review over food additives.[36] Congress added an efficacy requirement for drugs in 1962 after thalidomide, taken for pregnancy-related nausea, caused congenital anomalies of newborns around the world.[37] FDA first obtained jurisdiction over medical devices in 1938, but after serious safety issues from devices like the Dalkon Shield contraceptive and cardiac pacemakers, Congress gave FDA premarket review authority over devices in 1976.[38] And there is tobacco. With U.S. lung cancer deaths peaking around 1990,[39] FDA asserted jurisdiction over tobacco in 1996, lost it in 2000 via *FDA v. Brown & Williamson Tobacco Corp.*,[40] and received statutory premarket review authority in 2009 once Barack Obama became president.[41]

Although FDA has gained increasing premarket responsibilities over the U.S. health marketplace, formal increases in authority were often paired with other forms of disempowerment. As I will discuss, FDA's regulatory power has made it a target of corporations, laissez-faire thinkers, and anti-government activists,[42] who have found channels through which to attack FDA.[43] Corporations, in particular, are incentivized to avoid or erode premarket review because it is the gateway to marketing products to hundreds of millions of people.

B. The Role of FDA

One's understanding of premarket review depends on the role of FDA as a regulatory agency. FDA is most commonly understood to serve the dual purposes of public health and consumer protection. Seven former FDA Commissioners frame FDA as the "modern consumer safety net."[44] According to FDA itself, the mission of FDA is "protecting the public health by ensuring the safety, efficacy, and security" of FDA-regulated products.[45] Current FDA Commissioner Dr.

36 *See* Maricel V. Maffini, Thomas G. Neltner & Sarah Vogel, *We Are What We Eat: Regulatory Gaps in The United States That Put Our Health at Risk*, 15 PLOS BIOLOGY, Dec. 20, 2017, at 1, 1.

37 *See* PETER BARTON HUTT, RICHARD A. MERRILL & LEWIS A. GROSSMAN, FOOD AND DRUG LAW 642–43 (4th ed., 2014).

38 *Id.* at 1201.

39 Aaron, *supra* note 4, at 856.

40 529 U.S. 120, 160–61 (2000).

41 *See infra* Section II.C.

42 *See* Kapczynski, *supra* note 26, at 183.

43 *See infra* Sections I.C, II.F.

44 Robert M. Califf et al., *Seven Former FDA Commissioners: The FDA Should Be an Independent Federal Agency*, 38 HEALTH AFFS. 84, 84 (2019).

45 *What We Do*, U.S. FOOD & DRUG ADMIN. (Mar. 28, 2018), https://www.fda.gov/about-fda/what-we-do. In addition, FDA includes as part of its mission "helping to speed innovations that make medical products more effective, safer, and more affordable." *Id.* While this objective contains the word "innovation," it does not suggest FDA aims to lower the evidentiary bar or

Robert M. Califf asserts that FDA "preserves and protects the public health" through regulation.[46]

On the other hand, FDA is increasingly called an "innovation institution"—part of the arrangements that "structure the production and allocation of knowledge goods."[47] While premarket review may affect the development rate and reliability of new products, FDA's role is traditionally not "innovation."[48] However, there are two ways in which FDA is increasingly being connected with innovation. First, there has been pressure from industry to hurry products to market in order to expedite access to new products ("innovation") for patients.[49] As we will see, FDA has sometimes internalized these exhortations by allowing products on the market before they are vetted—sometimes at serious public health cost.[50] Alternatively, the evidentiary bar new products must meet can also be conceived as pro-innovation. That is, by guarding against the sale of "quack products," FDA can protect market space for new products that are truly innovative.[51]

C. Neoliberalism Disguised as Innovation

It is hard to miss the drumbeat of some advocates and authors who portray premarket review as anti-innovation. For many years, politicians have prioritized "FDA reform" on the grounds that FDA is responsible for delaying access to new products.[52] One article in the *Food and Drug Law Journal* observes that "[w]hile FDA does not intend to stifle innovation or access, its premarket approval

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hasten access to new products.

46 Robert M. Califf, *The FDA and the Clinical Community*, 328 JAMA 1043, 1043 (2022). Similarly, former Commissioner Margaret Hamburg and former Deputy Commissioner Joshua Sharfstein have written that the agency's overriding purpose is protecting public health. Margaret A. Hamburg & Joshua M. Sharfstein, *The FDA as a Public Health Agency*, 360 NEW ENG. J. MED. 2493, 2493 (2009).

47 Daniel J. Hemel & Lisa Larrimore Ouellette, *Innovation Institutions and the Opioid Crisis*, 7 J. L. & BIOSCIENCES 1, 4 (2020).

48 However, in 1997, a Republican Congress added speed to FDA's statutory mission: "taking appropriate action on the marketing of regulated products in a timely manner." Federal Food, Drug and Cosmetic Act (FDCA) § 1003. One could read this vague mission statement as pro-innovation or simply pro-efficiency (or maybe both).

49 Jonathan J. Darrow, Jerry Avorn & Aaron S. Kesselheim, *FDA Approval and Regulation of Pharmaceuticals, 1983-2018*, 323 JAMA 164, 168 (2020). Some might view innovation as strictly referring to an increased pace of product development incentivized through reducing regulatory barriers. However, earlier access is often viewed as innovation because patients are accessing new products faster. Informally, I believe the latter definition is more common, although there is overlap between these definitions.

50 *See, e.g.*, *infra* Sections II.B–II.E.

51 For further discussion of FDA and innovation, *see infra* Section III.B.

52 Merrill, *supra* note 31, at 1755–56.

programs accomplish this end through their very existence."[53] Another prominent article notes "the growing recognition that the realities of modern drug development mean that a heavy focus on premarket approval is no longer sufficient," in part because clinical trials "create[] delays" and "keep[] patients from accessing" new drugs.[54] Dr. Califf has said, "Americans have told their Congresspeople we would rather take more risk and have earlier access [to medical products]."[55] Others are more measured; for example, Peter Barton Hutt has said that FDA "must continually change" to "provide a reasonable balance between fostering innovation and protecting the public health."[56]

What these views share is an unexplained belief in a spectrum in which more stringent premarket review leads to less innovation, and vice versa. However, this assumption is easily debunked. After all, a world of no premarket review would have free availability of products with little knowledge about how to use them. In the words of Dr. Rita Redberg, "True innovations are welcomed, but cannot be recognized as such without clinical trial evidence to show that new technologies are beneficial for patients."[57] In other words, without knowledge, there is no innovation. Rebecca Eisenberg recognized this problem years ago when she noted that pharmaceutical innovation requires "the development of credible information about the effects of drugs."[58] As this Article will argue, premarket review is generally pro-innovation.[59] However, I will submit that premarket review is in tension with access to products—products which may or may not be innovative.

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53 Bonnie Scott, *Oversight Overhaul: Eliminating the Premarket Review of Medical Devices and Implementing a Provider-Centered Postmarket Surveillance Strategy*, 66 FOOD & DRUG L.J. 377, 378 (2011).

54 W. Nicholson Price II, *Introduction*, *in* FDA IN THE 21ST CENTURY: THE CHALLENGES OF REGULATING DRUGS AND NEW TECHNOLOGIES 247, 247, *supra* note 23. As I explain above, *supra* note 49, I view this as a type of innovation argument.

55 In the Bubble with Andy Slavitt, *Exclusive: FDA Commissioner on COVID-19 Vaccine for Kids 0-5 (with Robert Califf)*, STITCHER, at 15:30 (Apr. 28, 2022), https://www.stitcher.com/show/in-the-bubble-with-andy-slavitt/episode/exclusive-fda-commissioner-on-covid-19-vaccine-for-kids-0-5-with-robert-califf-202759879.

56 Peter Barton Hutt, *Historical Themes and Developments at FDA over the Past Fifty Years*, *in* FDA IN THE 21ST CENTURY: THE CHALLENGES OF REGULATING DRUGS AND NEW TECHNOLOGIES 17, 17, *supra* note 23.

57 *FDA Medical Device Approval: Is There a Better Way?: Hearing Before the Subcomm. on Health Care*, 112th Cong. (2011) (testimony of Dr. Rita Redberg), https://www.youtube.com/watch?v=iu4gHoa42So.

58 Rebecca S. Eisenberg, *The Role of the FDA in Innovation Policy*, 13 MICH. TELECOMM. & TECH. L. REV. 345, 349 (2007).

59 *See infra* Section III.B*; see also* Daniel Carpenter, Jeremy Greene & Susan Moffitt, *The Drug Efficacy Study and Its Manifold Legacies*, *in* FDA IN THE 21ST CENTURY: THE CHALLENGES OF REGULATING DRUGS AND NEW TECHNOLOGIES 306, 321, *supra* note 23 (describing the argument that premarket review helps remove "lemons" from the marketplace, which increases the "quality-weighted amount of innovation").

What explains the lack of critical interrogation of what innovation *is*? Why is premarket review often counterposed with innovation as an unquestionable fact? I would posit that beneath some innovation claims lies neoliberalism. Neoliberalism is a mode of governance that prioritizes market ordering, weakens social responsibilities and guarantees, and devolves decisions to the individual consumer level.[60] In the FDA context, I believe there is a common assumption that we should release "innovative" products sooner,[61] leaving individuals to make expert decisions about which drugs, lab tests, foods, and tobacco products to consume. This assumption likely stems in part from years of effort by industry to address "regulatory overkill at the FDA" and promote more rapid approvals[62]—suggesting industry has successfully reshaped the narrative of FDA.

I am not the first to suggest that neoliberalism has damaged FDA. Rather, I credit this observation to Amy Kapczynski;[63] some news articles have also discussed this possibility.[64] Kapczynski notes FDA's regulatory power has made it a target of laissez-faire thinkers and anti-government activists.[65] Other scholars have alluded to neoliberalism, albeit indirectly. For example, Daniel Hemel and Lisa Ouellette argue that "innovation institutions," such as FDA, are "politically produced" and politicians are not incentivized to design them effectively[66]—likely due to political, especially corporate, influence.

An "emphatic turn" toward neoliberalism began in the 1970s, largely as a project to "re-establish the conditions for capital accumulation and to restore the power of economic elites."[67] Economist Milton Friedman's famous 1970 *New York Times* opinion piece described the "ideal free market" as a place where "all cooperation is voluntary," and there "are no 'social' values, no 'social' responsibilities in any sense."[68] Friedman's free-market approach took hold in the 1970s amid a crisis of inflation and the establishment of market-minded think

60 Jedediah Britton-Purdy et al., *supra* note 26, at 1789 n.21; Jason J. Czarnezki & Katherine Fiedler, *The Neoliberal Turn in Environmental Regulation*, 2016 UTAH L. REV. 1, 2–3 (2016).

61 As noted, Dr. Califf believes Americans think "we would rather take more risk and have earlier access." STITCHER, *supra* note 55.

62 John Abraham & Rachel Ballinger, *The Neoliberal Regulatory State, Industry Interests, and the Ideological Penetration of Scientific Knowledge: Deconstructing the Redefinition of Carcinogens in Pharmaceuticals*, 37 SCI., TECH., & HUM. VALUES 443, 449–51 (2012).

63 *See* Kapczynski, *supra* note 26, at 183.

64 *See, e.g.*, Efthimios Parasidis, *The Trump Administration's FDA Is Both Victim and Villain*, BARRON'S (Aug. 26, 2020, 08:00 PM), https://www.barrons.com/articles/the-trump-administrations-fda-is-both-victim-and-villain-51598478351.

65 *See* Kapczynski, *supra* note 26, at 183.

66 Hemel & Ouellette, *supra* note 47, at 48.

67 DAVID HARVEY, A BRIEF HISTORY OF NEOLIBERALISM 2, 19 (1st ed., 2005).

68 Milton Friedman, *A Friedman Doctrine-- The Social Responsibility of Business Is to Increase Its Profits*, N.Y. TIMES (Sept. 13, 1970), https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html.

tanks.[69] In addition, Lewis Powell, Jr.'s famous 1971 Powell Memorandum laid out a multi-pronged blueprint to protect "business and the enterprise system" from those who "preferred socialism or some form of statism (communism or fascism)."[70]

FDA was caught in this storm. Although its power greatly increased in the 1960s, in the following decade, drug companies became "eager to push new drugs to market as quickly as possible to start generating revenue."[71] Regulated industry rebuked FDA for being too slow[72] and advanced numerous attacks on premarket review.[73] Deregulation, an "essential element of the neoliberal edifice,"[74] became a useful ally. The Reagan Administration loosened FDA enforcement and sought to make FDA a "partner" of industry.[75] Within a decade, a report found that FDA was "operating on a threadbare budget, close to impotence and badly in need of expanded powers."[76] As I will show, however, the erosion continued, increasingly leaving individuals in the position of making expert decisions about what is appropriate to put in and on their bodies.

Yet it is precisely this market ordering that some scholars, and sometimes FDA itself,[77] believe will invite innovation. This "innovation agenda" reflects the dedicated efforts of regulated industry to shape national discourse about FDA—often through the mouthpiece of sponsored patient groups who have clamored for faster access.[78] Because some industry players have used "innovation" arguments

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69 KEAN BIRCH & VLAD MYKHNENKO, THE RISE AND FALL OF NEOLIBERALISM: THE COLLAPSE OF AN ECONOMIC ORDER? 50 (2010).

70 Lewis Powell, *Attack on American Free Enterprise System* (Aug. 23, 1971), https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1000&context=powellmemo.

71 *See* Sarah S.P. DiMagno et al., *Accelerated Approval of Cancer Drugs—Righting the Ship of the US Food and Drug Administration*, 179 JAMA INTERNAL MED. 922, 922 (2019).

72 Darrow, Avorn & Kesselheim, *supra* note 49.

73 *See infra* Part II. Corporations do not always oppose premarket review, however. For example, pharmaceutical companies that developed COVID-19 vaccines intentionally withheld applying for authorization to avoid shoddy review influenced by President Trump. Avorn & Kesselheim, *supra* note 4, at 1706.

74 NICHOLAS FREUDENBERG, AT WHAT COST: MODERN CAPITALISM AND THE FUTURE OF HEALTH 27 (2021).

75 Herbert Burkholz, *A Shot in the Arm for the F.D.A.*, N.Y. TIMES (June 30, 1991), https://www.nytimes.com/1991/06/30/magazine/a-shot-in-the-arm-for-the-fda.html.

76 Burkholz, *supra* note 75.

77 *See, e.g.*, *infra* Section II.C.2; Rachel E. Sachs, W. Nicholson Price II & Patricia J. Zettler, *Rethinking Innovation at FDA*, B.U. L. REV., at 1, 3–5 (forthcoming 2023) (describing FDA, after approving a drug of questionable effectiveness and safety, justifying its decision based on spurring more research and innovation).

78 Alice Fabbri et al., *Industry Funding of Patient and Health Consumer Organisations: Systematic Review with Meta-Analysis*, BMJ, Jan. 22, 2020, at 1, 11; Susannah L. Rose et al., *Patient Advocacy Organizations, Industry Funding, and Conflicts of Interest*, 177 JAMA INTERNAL MED. 344, 347 (2017). Of course, there are exceptions to this trend. For example, some patient groups have supported premarket review. *See infra* Section III.B (describing HIV patients wanting

to support a neoliberal agenda, we should not be surprised that these arguments have proliferated. But these arguments are dangerous and backwards: in the view of myself and many others, premarket review is pro-innovation.[79] So we should be cautious of *innovation* arguments that are a mere disguise for neoliberalism. The danger is that we feel optimistic about the erosion of FDA's core regulatory regime—that we *delight in our own destruction*. As several top FDA scholars have noted, when FDA considers innovation in an approval decision, it paradoxically impairs later innovation.[80]

In this Article, I will support the proposition that premarket review's erosion is not a deliberate, carefully conceived thrust toward innovation but is better explained by external and internal influences on FDA. External forces include presidential interference (as advanced by the current Supreme Court),[81] control over FDA officials through the appointment process, congressional fiscal austerity,[82] corporate influence over FDA's budget, corporate lobbying for amendments to the FDCA, and expensive litigation often leading to curtailments of agency authority.

Internal forces are the permeation of an "innovation" ideology favoring rapid market entry, installation of ideologically acceptable leaders into the agency through politics and the revolving door,[83] and internal legal wrangling over enforcement among FDA staff, agency lawyers, and the Department of Justice (DOJ). These dynamics are complex and frequently take place beyond the public's eye. It is likewise difficult to associate these internal forces with particular FDA decisions, and while I have tried to decipher them, they represent one limitation of this Article.

Viewing the cumulative effects of these forces across five different regulatory areas (Figure 1), I submit that corporations have eroded premarket review and returned many heavily regulated areas to market ordering. The general trend across all surveyed product areas is an increasing ability of manufacturers to bring products to market faster and with less, little, or sometimes no oversight. These trends exemplify neoliberal governance, which E.

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new treatments but seeking to preserve premarket review).

79 *See infra* Section III.B.

80 Sachs, Price & Zettler, *supra* note 77, at 55.

81 Cass R. Sunstein & Adrian Vermeule, *The Unitary Executive: Past, Present, Future*, 2020 SUP. CT. REV. 83, 117 (arguing that the current Supreme Court has shown a "firm insistence on firm presidential control").

82 Former FDA Commissioner Andrew Von Eschenbach has described Congress as starving FDA of resources. Thomas Sullivan, *Former FDA Commissioner Calls for End of FDA Conflict of Interest Rules*, POL'Y & MED. (May 6, 2018), https://www.policymed.com/2012/05/former-fda-commissioner-calls-for-end-of-fda-conflict-of-interest-rules.html.

83 *See, e.g.*, Jeffrey Bien & Vinay Prasad, *Future Jobs of FDA's Haematology-Oncology Reviewers*, BMJ (Sept. 27, 2016), at 1, 1.

Melanie DuPuis & Brian J. Gareau define as: "[P]olitical actors have abandoned the idea of central state decision making and instead rely on market processes, individual self-sufficiency and responsibility, devolution of decision making down to local scales, and the concomitant 'hollowing out' of the nation-state."[84] If one takes seriously my analysis of five categories of premarket review, I believe it is difficult to deny that developments in premarket review carry the signs and symptoms of neoliberalism. The hollowing out of FDA's central decision making via premarket review reduces the role of the state in surveilling consumer products coming to market and devolves health decisions to individual consumers.

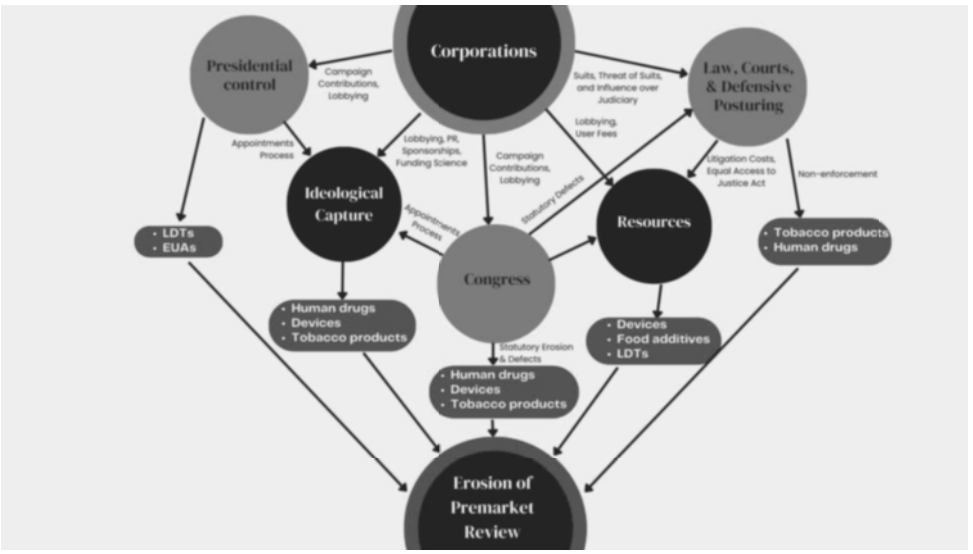

Figure 1: Corporate contributions to the erosion of premarket review.

Notably, the framework of neoliberalism is used intentionally, as opposed to its cousins deregulation and regulatory capture. Deregulation usually refers to removing or repealing agency rules.[85] But this Article describes something more complex than deregulation. In some cases, there is no active regulatory regime (despite statutory requirements), and so corporate influence has maintained the

84 E. Melanie DuPuis & Brian J. Gareau, *Neoliberal Knowledge: The Decline of Technocracy and the Weakening of the Montreal Protocol*, 89 SOC. SCI. Q. 1212, 1213 (2008) (citations omitted).

85 *See* Jody Freeman & Sharon Jacobs, *Structural Deregulation*, 135 HARV. L. REV. 585, 588 (2021) (referring to traditional "substantive" deregulation as "weaken[ing] or rescind[ing] particular agency rules or policies"); *Deregulation*, Merriam-Webster (2023), https://www.merriam-webster.com/dictionary/deregulation ("the act or process of removing restrictions and regulations").

status quo.[86] In others, Congress created special premarket pathways that, while adding complexity and rules, nonetheless allowed products to market with less vetting.[87] Because the fall of FDA review is not strictly a story about reducing regulations, "deregulation" is not an ideal descriptor. Recently, Jody Freeman and Sharon Jacobs have identified the broader concept of "structural deregulation," referring to a president attacking an agency's "core capacities" to undermine it.[88] This definition is closer, but FDA's story is not just about the president. Indeed, there is a complex interplay of institutions. This Article chiefly describes the ideology and practice of replacing the federal FDA guarantee with individual consumption "decisions"[89]—i.e., neoliberalism.[90]

Likewise, regulatory capture is a helpful but imperfect term. Dorit Rubinstein Reiss has defined regulatory capture as the "intentional influence" of an agency's decisions.[91] Influence may sometimes be so strong as to become control.[92] But a neoliberal outcome does not always stem *directly* from corporate influence. The erosion of premarket review occurs on several levels and is effectuated through multiple intermediary institutions. Regulatory capture—usually a story of the industry and the agency—misses the interplay of mechanisms that has eroded the social guarantee of FDA approval. This Article describes neoliberal erosion, not strictly capture or control.[93]

There are broader definitions of regulatory capture, of course, but they too are an imperfect fit. Most prominently, Daniel Carpenter and David A. Moss define regulatory capture as "the result or process by which regulation, in law or application, is consistently or repeatedly directed away from the public interest and toward the interests of the regulated industry, by the intent and action of the industry itself."[94] Certainly, industry has at times co-opted FDA review for its

86 *See infra* Section II.A (laboratory-developed tests).

87 *See infra* Section II.B (human drugs).

88 Freeman & Jacobs, *supra* note 85, at 587.

89 I place "decision" in quotation marks because (1) the vast majority of consumers would be unable to scientifically evaluate manufacturer products and claims, and (2) without FDA, the scientific evidence behind products would likely not exist. *See infra* notes 578–583 and accompanying text.

90 This point is somewhat semantic, and a broader understanding of "structural deregulation" than that described by Freeman and Jacobs is closer to my use of neoliberalism—albeit without the ideological valence.

91 Dorit Rubinstein Reiss, *The Benefits of Capture*, 47 WAKE FOREST L. REV. 569, 579 (2012) (reviewing definitions of regulatory capture and settling on "intentional influence").

92 *Id.*

93 Some scholars might place the fall of FDA review into the bucket of regulatory capture. *See* Daniel Carpenter & David A. Moss, *Introduction*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 1, 12 (DANIEL CARPENTER & DAVID A. MOSS EDS., 2013) (defining "weak capture" as "compromis[ing] the capacity of regulation to enhance the public interest").

94 *Id.* at 13.

own benefits.[95] But a results-based definition of capture misses that premarket review often benefits industry.[96] As Reiss points out, the public interest is amorphous,[97] and what benefits one company in the short-term may delegitimize an industry, occupy market space, or cause other long-term harms to business interests.[98] Indeed, FDA creates strange bedfellows. And regulatory capture may refer to something less systemic and less ideological than neoliberalism. Being a systemic concept, neoliberalism can describe the ongoing fraying of premarket review while leaving space for heterogeneity of mechanisms and industry goals.[99] The uniting feature is the devolution of decisions to individual consumers—often paired with an individual-choice ideology.

With these building blocks in place, I will evaluate five premarket review regimes FDA administers. These are likely the most significant—in terms of industry size and public health impact—of FDA's premarket review areas.

II. EROSION OF PREMARKET REVIEW ACROSS FIVE PRODUCT AREAS

This Part will examine the nature, history, and law of premarket review's erosion across five FDA areas. The goal is to substantiate the claim that premarket review is eroding and to illuminate why.

A. Laboratory-developed tests (LDTs)

A laboratory-developed test (LDT) is a clinical test developed in a lab for the lab's own use.[100] Laboratory-developed tests fit squarely within the FDCA's definition of medical devices.[101] While medical devices will be discussed later,[102]

95 *See, e.g.*, *infra* Section II.A (describing industry successfully reorienting FDA premarket review of laboratory-developed COVID-19 tests away from public health and toward liability shields and insurance reimbursement).

96 *See, e.g.*, Avorn & Kesselheim, *supra* note 4, at 1706 (describing pharmaceutical company efforts to preserve premarket review of COVID-19 vaccines); Citizen Petition, RAI Services Company, February 6, 2023, at 2, https://downloads.regulations.gov/FDA-2023-P-0430-0001/attachment_1.pdf (RJ Reynolds, a major tobacco company, petitioning FDA to ramp up enforcement against unauthorized tobacco products).

97 Reiss, *supra* note 91.

98 *See infra* notes 576–581 and accompanying text.

99 Nonetheless, both deregulation and regulatory capture are helpful terms that describe many of the phenomena in this Article, and I use them frequently.

100 *Laboratory Developed Tests*, U.S. FOOD & DRUG ADMIN. (Sept. 27, 2018), https://www.fda.gov/medical-devices/in-vitro-diagnostics/laboratory-developed-tests.

101 *See* FDCA § 201(h)(1) (defining "device" as, in brief, "an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent, or other similar or related article, including any component, part, or accessory, which is . . . intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease, in man or other animals, or . . . intended to affect the structure or any function of the body of man or other animals, and which does not achieve its primary intended purposes through chemical action.").

LDTs are treated separately here because FDA regulates them as a distinct category, and they raise unique issues of failed regulatory oversight.

Despite the 1976 statutory amendment requiring devices to have premarket authorization,[103] FDA has admitted it "has generally not enforced premarket review" of LDTs for most of the last 40 years.[104] It is concerning that FDA sua sponte excluded an entire class of medical devices from premarket review requirements. The predictable result is that some products that are not safe or effective would be brought to market. Nonetheless, FDA had less concern initially because of the small scope of use of LDTs (i.e., for a single medical establishment in one state) and because physicians would generally use and interpret the tests directly.[105] In addition, FDA may have sought to limit its own responsibilities in response to fiscal austerity and an increasingly dominant logic from the 1970s to the 2000s of favoring small government.[106]

In 2010, FDA became increasingly concerned about the public health impact of LDTs. LDTs had grown in complexity and were being used for an increasing number of illnesses, including life-threatening ones.[107] With the rise of overnight shipping, they were also being offered on the national and international levels.[108]

One particularly harrowing example of the failure of LDTs involved two women tested at Creighton University for the BRCA gene, associated with breast and ovarian cancer. One received a false positive result (i.e., it should have been negative) and proceeded to have both of her breasts removed via double mastectomy at age 23.[109] She was therefore unable to breastfeed her three kids.[110] The other woman tested negative for BRCA, but twenty years later discovered she was positive on retest.[111] The false negative result deprived her of key years

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102 *See infra* Section II.E.

103 *Id.*

104 *Laboratory Developed Tests*, *supra* note 100; Jonathan R. Genzen, Regulation of Laboratory-Developed Tests: A Clinical Laboratory Perspective, 152 AM. J. CLINICAL PATHOLOGY 122, 122 (2019).

105 *See* U.S. FOOD & DRUG ADMIN., FRAMEWORK FOR REGULATORY OVERSIGHT OF LABORATORY DEVELOPED TESTS (LDTS) 7 (2014); *The Role of Lab-Developed Tests in the In Vitro Diagnostics Market*, PEW (Oct. 22, 2021), https://www.pewtrusts.org/en/research-and-analysis/reports/2021/10/the-role-of-lab-developed-tests-in-the-in-vitro-diagnostics-market.

106 *See supra* Section I.C.

107 *See* U.S. FOOD & DRUG ADMIN., *supra* note 105, at 8.

108 *Id.*

109 Christa Dubill, *She Tested Positive for Breast Cancer and Got a Double Mastectomy. The DNA Test Was Wrong*, WMAR (Mar. 26, 2019), https://www.wmar2news.com/news/national/she-tested-positive-for-breast-cancer-and-got-a-double-mastectomy-the-dna-test-was-wrong.

110 *Id.*

111 Katie Kosko, *Two Women Given the Wrong BRCA Results Are Now Bound by a Blunder*, CURE (Apr. 9, 2020), https://www.curetoday.com/view/two-women-given-the-wrong-brca-results-bound-by-a-blunder.

in which to take prophylactic steps to reduce her cancer risk.[112]

In its report describing twenty case studies on the threat of LDTs to public health, FDA documented many risks.[113] These include abortion based on false genetic test results of a fetus, unnecessary antibiotics based on false positive bacterial tests, incorrect drug use to treat cancer, and unnecessary removal of a woman's ovaries due to KRAS gene testing.[114] These risks continue today. For example, a test of the KRAS gene offered by Mira Dx, predicated on a likely spurious association between the KRAS gene and ovarian cancer, remains on the market.[115] Further, a 2022 *New York Times* exposé revealed that many fetal genetic LDTs remain on the market despite abysmal efficacy—for these tests, a positive result for a fetal abnormality is wrong 85% of the time, despite touting the test as providing "information you can trust" that can give you "peace of mind."[116] A 2015 *Wall Street Journal* article named LDTs the "wild west" of medicine.[117]

Amidst these concerns, in 2010, FDA announced its intent to reconsider its enforcement discretion policy that allows LDTs to be marketed without premarket review.[118] Four years later, after a workshop and internal discussion, FDA issued a draft guidance laying out a plan to establish premarket review to "ensure [the] safety and effectiveness" of LDTs.[119]

FDA's regulatory push drew the ire of industry and "intense lobbying."[120] The American Clinical Laboratory Association (ACLA) spent $1.6 million on lobbying between 2014 and 2015.[121] It also hired two world-famous lawyers—Paul Clement, former solicitor general and a known industry favorite,[122] and

112 Most likely these tests were LDTs given they were performed out of a Creighton University laboratory. *See id.*

113 U.S. FOOD & DRUG ADMIN., THE PUBLIC HEALTH EVIDENCE FOR FDA OVERSIGHT OF LABORATORY DEVELOPED TESTS: 20 CASE STUDIES (2015).

114 *Id.* at 11–12, 12–14, 16-18.

115 *KRAS-Variant Testing,* MIRADX (2022), https://miradx.com/kras-variant-testing.

116 Sarah Kliff & Aatish Bhatia, *When They Warn of Rare Disorders, These Prenatal Tests Are Usually Wrong*, N.Y. TIMES (Jan. 6, 2022), https://www.nytimes.com/2022/01/01/upshot/pregnancy-birth-genetic-testing.html.

117 Thomas M. Burton, *Is Lab Testing the 'Wild West' of Medicine?*, WALL STREET J. (Dec. 10, 2015, 9:25 PM), https://www.wsj.com/articles/is-lab-testing-the-wild-west-of-medicine-1449800707.

118 *Laboratory Developed Tests*, *supra* note 100.

119 U.S. FOOD & DRUG ADMIN., *supra* note 105, at 10.

120 Jeffrey N. Gibbs, *LDTs: The Saga Continues*, FOOD & DRUG L. INST. (Apr. 2017), https://www.fdli.org/2017/04/ldts-saga-continues.

121 Burton, *supra* note 117.

122 *See, e.g.*, Jason Zengerle, *How Paul Clement Won the Supreme Court's Oral Arguments on Obamacare*, INTELLIGENCER (Mar. 27, 2012), https://nymag.com/intelligencer/2012/03/how-paul-clement-won-the-obamacare-oral-arguments.html (representing industry against the Affordable Care Act); Ryan J. Reilly, *Dog the Bounty Hunter and a Top Conservative Lawyer Are*

Laurence Tribe, renowned Harvard law professor[123]—to fend off FDA. The duo wrote an aggressive memo arguing that LDTs are the "practice of medicine" and therefore cannot be regulated as medical devices.[124] This argument is dubious given studying the intricacies of lab tests is distant from the core duties of doctoring, such as speaking with patients, ordering diagnostics and treatments, and documenting visits. Still, the document may have been a strategic success. ACLA released the memo the day before FDA held a workshop about LDT regulation,[125] seemingly to preempt FDA. The memo, combined with industry litigation threats,[126] likely gave the agency pause. Rumors circulated that FDA would finalize a new policy.[127] Instead, faced with resistance to the 2014 proposal, FDA did not or could not act before the election of Donald Trump.[128]

In November 2016, just after Donald Trump was elected president, FDA backed off its plan to initiate premarket review of LDTs.[129] The likely reason is that, in order to follow through on the draft guidance, FDA would have needed to take a "significant" regulatory action that would trigger review by the Office of Information and Regulatory Affairs—an office in the Executive Office of the President.[130] Rather than take regulatory action that would be "vetoed" by the Administration, FDA issued a 2017 "discussion paper" laying out some tentative ideas for a premarket review regime that would "balance patient protection with

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Trying to Save the Bail Industry, HUFFPOST (Feb. 13, 2017), https://www.huffpost.com/entry/bail-industry-unconstitutional_n_58adf025e4b05ca474a04011 (representing the American Bail Coalition, a trade association for the bail bond industry).

123 *ACLA Retains Attorneys Paul D. Clement and Laurence H. Tribe to Represent ACLA in Opposing the FDA's Proposal to Treat Laboratory Developed Tests (LDTs) as Medical Devices*, AM. CLINICAL LABORATORY ASS'N (Nov. 18, 2014), https://www.acla.com/acla-retains-attorneys-paul-d-clement-and-laurence-h-tribe-to-represent-acla-in-opposing-the-fdas-proposal-to-treat-laboratory-developed-tests-ldts-as-medical-devices.

124 Paul D. Clement & Laurence H. Tribe, *Laboratory Testing Services, As the Practice of Medicine, Cannot Be Regulated as Medical Devices* (2015), https://www.acla.com/wp-content/uploads/2015/01/Tribe-Clement-White-Paper-1-6-15.pdf.

125 Mary K. Caffrey, *Arguments Taking Shape for and Against FDA Regulation of Diagnostic Tests*, AJMC (Feb. 16, 2015), https://www.ajmc.com/view/arguments-taking-shape-for-and-against-fda-regulation-of-diagnostic-tests.

126 Damian Garde, *The Most Influential People in Biopharma Today*, FIERCE BIOTECH (Mar. 15, 2016), https://www.fiercebiotech.com/special-report/most-influential-people-biopharma-today (describing "CDRH's issuance of a draft guidance that would regulate the lab-developed test (LDT) segment of the diagnostics industry. LDT providers have threatened to sue the FDA via the American Clinical Laboratory Association (ACLA).").

127 Gibbs, *supra* note 120.

128 Sheila Kaplan, *FDA Puts Off Closing Lab-Test 'Loophole,' Leaving Decision to Congress and Trump*, STAT (Nov. 18, 2016), https://www.statnews.com/2016/11/18/fda-lab-test-loophole.

129 *See* Thomas M. Burton, *FDA Backs Off Plans to Issue Rules Governing Lab-Developed Tests*, WALL STREET J. (Nov. 21, 2016, 8:41 A.M.), https://www.wsj.com/articles/fda-backs-off-plans-to-issue-rules-governing-lab-developed-tests-1479529259.

130 Cass R. Sunstein, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1845 (2013).

continued access and innovation."[131] The LDT space remained quiet until 2020, reflecting the President's quiet authority blocking premarket review despite a compelling public health rationale, FDA's public health mission, and statutory requirements.

However, in 2020, COVID-19 struck the world and FDA became sandwiched between its desire that new viral tests be safe and effective and the immediate need for tests. As political pressure mounted, Vice President Mike Pence and FDA Commissioner Stephen Hahn promised tens of thousands to even a million tests in short order.[132] On February 29, 2020, FDA issued a policy to expedite test development in which labs could validate their own tests and immediately market them, with an emergency use authorization (EUA) request to be submitted later.[133] (The EUA pathway allows FDA, during an emergency, to temporarily clear health products with less evidence.[134]) For lab-developed *antibody* tests, no EUA was required.[135] Because this regime was stronger than *enforcement discretion*, it was a step closer toward premarket review of LDTs,[136] even as it allowed tests on the market without premarket review.

The predictable result of a weak premarket regime was, again, a flood of tests of questionable efficacy onto the market. House Representative Raja Krishnamoorthi lamented that four antibody test makers received an EUA, compared with 107 companies which simply brought their tests to market.[137] According to two top FDA officials in May 2020, including Dr. Jeffrey Shuren, the top device official, "[F]lexibility never meant we would allow fraud. We unfortunately see unscrupulous actors marketing fraudulent test kits and using the pandemic as an opportunity to take advantage of Americans' anxiety."[138]

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131 *Discussion Paper on Laboratory Developed Tests (LDTs)*, U.S. FOOD & DRUG ADMIN. 10 (2017), https://www.fda.gov/media/102367/download.

132 Katie Thomas & Knvul Sheikh, *Estimates Fall Short of F.D.A.'s Pledge for 1 Million Coronavirus Tests*, N.Y. TIMES (Mar. 3, 2020), https://www.nytimes.com/2020/03/03/health/coronavirus-tests-fda.html.

133 *Coronavirus (COVID-19) Update: FDA Issues New Policy to Help Expedite Availability of Diagnostics*, U.S. FOOD & DRUG ADMIN. (Feb. 29, 2020), https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics.

134 FDCA § 564.

135 U.S. FOOD & DRUG ADMIN., POLICY FOR DIAGNOSTIC TESTS FOR CORONAVIRUS DISEASE-2019 DURING THE PUBLIC HEALTH EMERGENCY 9 (Mar. 2020).

136 Whereas FDA has little role in a full enforcement discretion regime, the February policy at least allowed FDA to conduct scientific review of some LDTs after the fact.

137 Hannah Hagemen, *Antibody Tests Go to Market Largely Unregulated, Warns House Subcommittee Chair*, NPR (Apr. 26, 2020, 3:18 P.M.), https://www.npr.org/sections/coronavirus-live-updates/2020/04/26/845164212/antibody-tests-go-to-market-largely-unregulated-warns-house-subcommittee-chair. Of note, there is likely some, but not complete, overlap with the category of antibody tests and LDTs.

138 *Insight into FDA's Revised Policy on Antibody Tests: Prioritizing Access and Accuracy*,

Concurrent with this statement, the agency laid out a stronger policy for LDTs, stating "FDA recommends" submission of an EUA request within 10 days of notifying FDA of validation of an antibody-based LDT, although it would not object to marketing without EUA given it would rather focus on commercial manufacturers, which likely have larger distribution networks.[139] For other COVID-19 LDTs, FDA stated that companies should notify FDA if their tests are validated in order to be placed on FDA's website, and if they do not submit an EUA request within 15 days of validation, they will be removed from FDA's online list of tests.[140] In practice, many companies complied. The policy was efficient and low-cost. One study of the first 14 EUAs issued for COVID-19 LDTs found that FDA took an average of 17 days to review each EUA request, and the process cost labs between $1,800 and $7,800 per submission.[141] FDA even provided a 20-page template for EUA requests.[142]

The Trump Administration was not pleased with FDA's oversight of LDTs, however limited and efficient. In August 2020, the Department of Health and Human Services (HHS), in a stunning paragraph, "determined" that FDA "will not require premarket review of laboratory developed tests" unless FDA engages in notice-and-comment rulemaking.[143] While FDA had attempted to offer some flexibility through nuanced policies, HHS discarded all prior regulatory work and ended premarket review for LDTs (except for voluntary submissions). HHS accomplished this by "undelegating" authority over LDTs; indeed, the FDCA gives premarket review authority to HHS, not to FDA.[144] This move sent shockwaves through FDA. HHS purported to end premarket review that by statute FDA was supposed to be conducting and that was integral to addressing a public health crisis. The move triggered "wide-ranging expressions of

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U.S. FOOD & DRUG ADMIN. (May 4, 2020), https://web.archive.org/web/20200504170131/https://www.fda.gov/news-events/fda-voices/insight-fdas-revised-policy-antibody-tests-prioritizing-access-and-accuracy.

139 U.S. FOOD & DRUG ADMIN., POLICY FOR DIAGNOSTIC TESTS FOR CORONAVIRUS DISEASE-2019 DURING THE PUBLIC HEALTH EMERGENCY 15–16 (May 2020).

140 *Id.* at 8–9.

141 Hetal D. Marble et al., *Temporary Regulatory Deviations and the Coronavirus Disease 2019 (COVID-19) PCR Labeling Update Study Indicate What Laboratory-Developed Test Regulation by the US Food and Drug Administration (FDA) Could Look Like*, 23 J. MOLECULAR DIAGNOSTICS 1207, 1211 (2021).

142 U.S. FOOD & DRUG ADMIN., *supra* note 135, at 21–41.

143 *Rescission of Guidances and Other Informal Issuances Concerning Premarket Review of Laboratory Developed Tests*, DEP'T OF HEALTH & HUM. SERVS. (Aug. 19, 2020), http://web.archive.org/web/20200820212750/https://www.hhs.gov/coronavirus/testing/recission-guidances-informal-issuances-premarket-review-lab-tests/index.html.

144 *See* James A Boiani & Megan Robertson, *The VALID Act: Senate Action Brings FDA Regulation of LDTs Closer to Fruition*, NAT'L L. REV. (May 20, 2022), https://www.natlawreview.com/article/valid-act-senate-action-brings-fda-regulation-ldts-closer-to-fruition.

concern."[145]

Unfortunately, the time needed to engage in notice-and-comment rulemaking all but prevented FDA from actuating premarket review for LDTs to address COVID-19. Even worse, HHS officials clarified that the decision was intended to be broader than COVID-19—implying FDA did not have jurisdiction over LDTs.[146] Former FDA Commissioner Scott Gottlieb scribed a scathing Twitter thread rebuking the new "[s]weeping medical device policy" advanced mid-public-health crisis.[147] Rachel Sachs described the change as aligned with the Trump Administration's "degregulatory bent."[148] Congressman Frank Pallone warned that the Trump Administration was "[f]looding the market with unregulated and potentially inaccurate tests."[149] In October 2020, the FDA fully capitulated and stated it would end all review of EUA requests, even voluntary ones, explaining that it was not worth its resources,[150] likely because the highest-risk labs would not submit EUA requests, thus diminishing the public health value of continued review. By September 2021, 47% of COVID-19 tests on the market known to FDA were unauthorized.[151] As an indicator of poor-quality tests on the market, as of December 2021, FDA had issued import alerts for 348 COVID-19 tests.[152]

The next phase of the saga was even more stunning and revealed how premarket review of LDTs in some ways served regulated parties more than the public health. The ACLA, which earlier had hired Laurence Tribe and Paul Clement to argue FDA did not have authority over LDTs, said FDA's ending of premarket review "creates unnecessary confusion" and the agency should allow *voluntary* submission of EUA requests.[153] In other words, industry wanted a

145 Eli Y. Adashi & I. Glenn Cohen, *SARS-CoV-2 Laboratory-Developed Tests: Integrity Restored*, 327 JAMA 1229, 1230 (2022).

146 David Lim & Zachary Brennan, *Trump Administration Limits FDA Review of Some Coronavirus Tests*, POLITICO (Aug. 19, 2020), https://www.politico.com/news/2020/08/19/trump-fda-review-coronavirus-tests-398924.

147 Scott Gottlieb (@ScottGottliebMD), Twitter (Aug. 22, 2020, 8:43 AM), https://twitter.com/ScottGottliebMD/status/1297152402773233666.

148 Lim & Brennan, *supra* note 146.

149 *Pallone Demands Briefing on HHS Decision to Bypass FDA and Allow Lab Developed COVID-19 Tests to Come to Market Without Review* (Aug. 20, 2020), https://energycommerce.house.gov/newsroom/press-releases/pallone-demands-briefing-on-hhs-decision-to-bypass-fda-and-allow-lab.

150 *See* Greg Salbodkin, *FDA Takes Hands Off EUA Review for COVID-19 Lab Developed Tests*, MEDTECHDIVE (Oct. 8, 2020), https://www.medtechdive.com/news/fda-will-no-longer-review-eua-submissions-for-lab-developed-tests/586647.

151 U.S. GOV'T ACCOUNTABILITY OFF., FDA TOOK STEPS TO HELP MAKE TESTS AVAILABLE; POLICY FOR FUTURE PUBLIC HEALTH EMERGENCIES NEEDED 21–22 (2022).

152 *Id.* at 31.

153 *ACLA Statement on FDA Accouchement Regarding EUA Reviews*, AMERICAN CLINICAL LABORATORY ASS'N (Oct. 7, 2020), https://www.acla.com/acla-statement-on-fda-announcement-

voluntary premarket review regime. Likely, many labs wanted to take advantage of liability protections for EUA-authorized tests under the Public Readiness and Emergency Preparedness (PREP) Act,[154] as well as mandatory reimbursement by insurers under the Coronavirus Aid, Relief, and Economic Security (CARES) Act.[155]

On a November 2020 media call, Brett Giroir, Assistant Secretary for Health, stated that FDA does not have "regulatory jurisdiction" over LDTs and that EUAs are not required, but nonetheless directed FDA to review EUA requests for COVID-19 LDTs.[156] This perverted execution of food and drug regulation meant that FDA was forbidden from reviewing LDTs based on public health risk; rather, it would do so at the White House's demand, strictly for those labs that would benefit financially from an EUA. Therefore, FDA resources and staff would be dedicated to analyses and paperwork for the benefit of corporations.

In November 2021, President Biden's HHS withdrew the Trump Administration "policy,"[157] and FDA issued fresh guidance pushing labs to submit EUA requests within 60 days (or otherwise expecting them to pull their LDTs from the market).[158] FDA noted the importance of accurate tests to avoid under- and over-treatment, waste of resources, and further spread—exactly why premarket review might be important for tests for a severe and often lethal disease like COVID-19.[159] While this new policy was a positive development for the quality of COVID-19 LDTs, it did not address concerns with other types of LDTs, leaving many of the previously discussed public health issues unresolved. On June 14, 2023, FDA announced its intent to issue a proposed rule making clear that LDTs are devices under the FDCA, signaling it may be finally trying to

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regarding-eua-reviews.

154 Kyle Y. Faget, *EUAs for LDTs No Longer Required, But at the Expense of PREP Act Immunity*, 12 NAT'L L. REV. (Aug. 24, 2020), https://www.natlawreview.com/article/euas-ldts-no-longer-required-expense-prep-act-immunity.

155 *See* Coronavirus Aid, Relief, and Economic Security Act (2020) § 3201–02.

156 Joyce Frieden, *HHS Pushes FDA to Speed Up EUAs for Some COVID-19 Tests*, MEDPAGE TODAY (Nov. 17, 2020), https://www.medpagetoday.com/infectiousdisease/covid19/89726; Greg Slabodkin, *In Shift, FDA Ordered to Provide 'Timely' EUA Reviews for COVID-19 Lab Developed Tests*, MEDTECHDIVE (Nov. 17, 2020), https://www.medtechdive.com/news/giroir-directs-fda-to-provide-timely-eua-reviews-for-covid-19-lab-develop/589159.

157 *Statement by HHS Secretary Xavier Becerra on Withdrawal of HHS Policy on Laboratory-Developed Tests* (Nov. 15, 2021), https://www.hhs.gov/about/news/2021/11/15/statement-hhs-secretary-xavier-becerra-withdrawal-hhs-policy-laboratory-developed-tests.html.

158 U.S. FOOD & DRUG ADMIN., POLICY FOR DIAGNOSTIC TESTS FOR CORONAVIRUS DISEASE-2019 DURING THE PUBLIC HEALTH EMERGENCY (REVISED) 13 (Nov. 2021), https://web.archive.org/web/20211201210146/https://www.fda.gov/media/135659/download.

159 *Id.* at 5. The administration's ability to review COVID-19 LDTs benefitted from $500 million in extra funding provided by the American Rescue Plan Act. American Rescue Plan Act of 2021, Pub. L. No. 117-2, § 2304.

end non-enforcement of premarket review for LDTs.[160] If FDA continues to pursue premarket review of LDTs, it will likely face industry opposition, litigation, and the ticking clock of a possible change in administration.

B. Human Drugs

America's pharmaceutical system has been criticized for at least two decades by people at the top of their field. Ameet Sarpatwari, Michael S. Sinha, and Aaron S. Kesselheim have called the pharmaceutical market "broken."[161] Andrew Kolodny has rebuked FDA for making numerous mistakes contributing to the opioid crisis, asserted FDA has failed to properly enforce the FDCA, and argued for oversight of FDA to "ensure that public health is consistently prioritized ahead of industry interests."[162] Jacqueline Salwa and Christopher Robertson have made the stunning suggestion of reorganizing federal public health authority to allow a separate agency from FDA to review medical products—implying FDA would lose jurisdiction over its foundational area.[163] Prescription drugs themselves are a top cause of death in the United States today.[164] Yet only about 11 to 16 percent of new molecular entities carry a significant therapeutic gain, according to Donald W. Light, Joel Lexchin, and Jonathan Darrow.[165] While many drugs have entered popular American discourse for public health reasons, perhaps none is so salient as opioids, which have cost more than 500,000 American lives.[166]

Still, medicines do save lives,[167] and pharmaceutical companies have used the benefits of drugs to press the government for requiring too much evidence and working too slowly in approving new drugs.[168] These companies have successfully lobbied for a suite of special programs (Table 2) that make drug regulation fairly opaque to outside observers but advantageous to companies seeking quick time-to-market. Dr. Joshua Sharfstein has explained that FDA's

160 *See* Anna Clark, *Scores of Critical Lab Tests Fall into a Regulatory Void. The FDA Is Trying to Close It.*, PROPUBLICA (June 14, 2023), https://www.propublica.org/article/fda-moves-to-regulate-lab-developed-tests.

161 Ameet Sarpatwari, Michael S. Sinha & Aaron S. Kesselheim, *The Opioid Epidemic: Fixing a Broken Pharmaceutical Market*, 11 HARV. L. & POL'Y REV. 463 (2017).

162 Kolodny, *supra* note 4, at 746–47.

163 Jacqueline Salwa & Christopher Robertson, *Designing an Independent Public Health Agency*, 384 NEW ENG. J. MED. 1684, 1685 (2021).

164 Donald W. Light & Joel Lexchin, *The FDA's New Clothes*, BMJ (2015), at 1.

165 Light et al., *supra* note 4, at 592.

166 Aaron, *supra* note 11, at 17.

167 The World Health Organization has a list of 591 essential medicines that should be available to all health systems at all times. *WHO Model List of Essential Medicines – 22nd List, 2021*, WORLD HEALTH ORG. (Sept. 30, 2021), https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2021.02.

168 Avorn & Kesselheim, *supra* note 4, at 1706.

regulation of drugs "has evolved over time into a thicket of special programs, flexible review criteria, and generous incentives. As a result, it is challenging to understand the totality of these reforms on drug approval in the United States."[169]

Program	**Year**
Orphan Drugs	1983
Fast Track	1988
Accelerated Approval	1992
Priority Review	1992
Softening of Two-Clinical-Trial Requirement	1997
Emergency Use Authorization	2004
Enriched Enrollment Randomized Withdrawal Trials	2006
Priority Review Vouchers	2007[170]
Breakthrough Therapy	2012
Generating Antibiotic Incentives Now	2012
Limited Population Pathway for Antibacterial and Antifungal Drugs	2016
Real-World Evidence	2016
Regenerative Medicine Advanced Therapy	2016
Material Threat Medical Countermeasure	2016
Right to Try	2018

Table 2: Special Programs and Regulatory Changes Speeding Review or Lowering Evidentiary Burden for New Drugs

169 Joshua M. Sharfstein, *Reform at the FDA—In Need of Reform*, 323 JAMA 123, 123 (2020).

170 The original program, created in 2007, provided vouchers for priority review to manufacturers who developed therapies for neglected tropical diseases. *See* Oulu Wang, *Buying and Selling Prioritized Regulatory Review: The Market for Priority Review Vouchers as Quasi-Intellectual Property*, 73 FOOD & DRUG L.J. 383, 388 (2018). However, the program was expanded in 2012 and 2016 to include rare pediatric diseases and medical countermeasures. *Id.*

The overarching trend of drug regulation, however, is a shift away from the clinical trial, often considered the "gold standard" of medical evidence, in favor of data sources that are less reliable to show safety and efficacy but are more likely to suggest a drug works. Many drugs come to market with less evidence than would have been required twenty years ago, despite the fact that "[d]etermining the safety and efficacy of the therapies clinicians use and patients receive is at the heart of the medical system."[171]

This Part will examine the state of premarket review for drugs, surveying areas such as fast track, accelerated approval, surrogate markers, clinical trial quantity and quality, and real-world evidence.

1. Overarching View

FDA's regulation of drugs is probably its most iconic and historic responsibility. FDA's premarket review of drugs emerged as a series of high-profile medical disasters from unregulated and dangerous products rattled the country.[172] Congress created a safety-based approval process for drugs in 1938 after deaths from sulfanilamide elixir, and added an efficacy requirement in 1962 after thalidomide caused congenital anomalies of newborns around the world.[173] FDA interpreted the 1962 statute's requirement for "adequate and well-controlled investigation*s*" to require *two* randomized controlled trials, the gold standard of evidence, to prove a drug's efficacy.[174]

Since the 1960s, industry has complained about the time and cost needed to seek and obtain approval.[175] Thus began a decades-long campaign to pressure FDA to relax its approval standards. During the AIDS crisis, LGBTQ activists pressured FDA to allow patients to take antiretrovirals during the evidence-gathering process.[176] This movement provided industry both a venue for resistance *and* an easy-to-understand example with which to denounce premarket review.[177] The rise of Reaganomics, increasingly concentrated wealth during the 1970s and 1980s, and surging corporate power pushed against a high bar for market entry in favor of speedy approvals that would maximize economic growth

171 Lindsay R. Baden et al., *The FDA and the Importance of Trust*, 383 NEW ENG. J. MED. e148, e149 (2020).

172 *See* HUTT ET AL., *supra* note 37; Lynch, *supra* note 23, at 35.

173 HUTT ET AL., *supra* note 37.

174 FDCA § 505(d) (emphasis added); *Development & Approval Process: Drugs*, U.S. FOOD & DRUG ADMIN. (Apr. 8, 2022), https://www.fda.gov/drugs/development-approval-process-drugs.

175 Darrow, Avorn & Kesselheim, *supra* note 49.

176 *See infra* notes 599–605.

177 *See id.*

and financial returns to industry, in the name of "patients" who need drugs.[178] Industry was heavily incentivized to drive FDA to review more quickly because time during which products were reviewed is time lost for sales, and the review period runs the clock on patents. There was also some concern that the United States was suffering from late access to new drugs, a phenomenon labeled the "drug lag."[179]

For drugs, deregulatory statutes and ideological capture were more important than legal cases in undermining premarket review. Courts rebuffed a key attack on drug premarket review in *In re Barr Laboratories*.[180] Here, a company sought mandamus requiring FDA to "act promptly" on its generic drug applications, which were pending longer than the statutory timeline of 180 days; FDA admitted significant delays, but explained there was a "personnel crisis" (i.e., resource constraints).[181] If plaintiffs were successful, the one-two punch of fiscal austerity with a tight timeline could have undermined premarket review by requiring hasty, unconsidered decisions. But the D.C. Circuit recognized the foolishness of mandamus, which would allow litigating companies to jump the queue[182]—incentivizing more companies to litigate and waste government resources. In deference to the day-to-day administration of government, the court respected FDA's review timelines and denied mandamus.[183]

Similarly, in *Abigail Alliance v. von Eschenbach*,[184] the conservative think tank Washington Legal Foundation tried, and failed, to establish a constitutional right among terminally ill patients to access untested drugs.[185] Legal commentators warned that such a right could collapse the "regulatory safety net" protecting patients from untested drugs, and ultimately reflected a "market-oriented, deregulatory perspective."[186] The en banc D.C. Circuit held that

178 *See* DiMagno et al., *supra* note 71, at 923; Lewis A. Grossman, *AIDS Activists, FDA Regulation, and the Amendment of America's Drug Constitution*, 42 AM. J. L. & MED. 687, 700 (2016).

179 Fredrik Andersson, *The Drug Lag Issue: The Debate Seen from an International Perspective*, 22 INT'L J. HEALTH SERVS. 53, 53 (1992). However, as discussed later, the number of drugs approved is an imperfect indication of the number of drugs that are safe and effective. *See infra* notes 609-618 and accompanying text.

180 930 F.2d 72 (D.C. Cir. 1991).

181 *Id.* at 73–74.

182 *Id.* at 75.

183 *Id.* at 73.

184 Abigail All. for Better Access to Developmental Drugs v. Von Eschenbach, 445 F.3d 470 (D.C. Cir. 2006), *rev'd en banc*, 495 F.3d 695 (D.C. Cir. 2007), *cert. denied*, 552 U.S. 1159 (2008). The Washington Legal Foundation's attempts to undermine premarket review through litigation are discussed further below. *See infra* Section II.B.4.

185 Elizabeth Weeks Leonard, *Right to Experimental Treatment: FDA New Drug Approval, Constitutional Rights, and the Public's Health*, 37 J. L., MED. & ETHICS 269, 270 (2009).

186 *See, e.g.*, Peter D. Jacobson & Wendy E. Parmet, *A New Era of Unapproved Drugs: The Case of* Abigail Alliance v Von Eschenbach, 297 JAMA 205, 207 (2007).

terminally ill patients do not have a constitutional right to access unapproved drugs.[187]

With courts generally unwilling to disturb premarket review of drugs,[188] industry took two approaches. First, rather than support more FDA appropriations, the drug industry advanced the first FDA user fee program under the Prescription Drug User Fee Act of 1992 (PDUFA).[189] It is difficult to overstate the benefits to industry of PDUFA, along with its parallel iterations for generic drugs, devices, biologics, and other product areas. While these programs allowed faster review of medical products ostensibly to protect the public health, these programs selectively funded only those FDA statutory mandates needed to bring products to market, and not those needed to improve science, conduct postmarket surveillance, or enforce the law.[190] As with other product review areas, then, user fee programs facilitated review on industry's terms. As to speed, FDA, as part of periodic negotiations, signs "commitment letters" promising industry expeditious review times.[191] And, more structurally, PDUFA negotiations create a regular *reopening* (i.e., opportunity for statutory amendment) of the FDCA that facilitates pro-industry changes to premarket review.[192] During these periodic reopenings, FDA's programs are in jeopardy if the new statute does not pass,[193] giving industry excessive leverage to reshape premarket review. Over time, the user fee legislation has increasingly required FDA to convene with industry, thus increasing industry influence.[194]

Concurrent with the shift to user fees, industry sought and obtained a number of expedited review programs. The Fast Track Program (1988) speeds reviews for drugs targeted to serious diseases with unmet treatment needs.[195]

187 Abigail All. for Better Access to Developmental Drugs v. Von Eschenbach, 495 F.3d 695 (D.C. Cir. 2007), *cert. denied*, 552 U.S. 1159 (2008).

188 *But see infra* Section II.B.4 (off-label marketing).

189 Pub. L. No. 102-571, 106 Stat. 4491 (1992).

190 *See* Hutt, *supra* note 4, at 452–54.

191 *See, e.g.*, *PDUFA VII: Fiscal Years 2023–2027*, U.S. FOOD & DRUG ADMIN. (Jan. 26, 2023), https://www.fda.gov/industry/prescription-drug-user-fee-amendments/pdufa-vii-fiscal-years-2023-2027.

192 Mitchell, Trivedi & Bach, *supra* note 4, at 291.

193 *Id.*

194 Jonathan J. Darrow, Jerry Avorn & Aaron S. Kesselheim, *Speed, Safety, and Industry Funding—From PDUFA I to PDUFA VI*, 377 NEW ENG. J. MED. 2278, 2282 (2017).

195 FDCA § 506(b). While this article does not have the space for a full treatment of Fast Track, one drug merits a brief discussion. The story of the diabetes drug troglitazone (Rezulin) supports FDA's prioritization of drug commercialization over safety and effectiveness. Troglitazone came to market through the Fast Track Program in 1997. David Willman, *Fears Grow Over Delay in Removing Rezulin*, L.A. TIMES (Mar. 10, 2000), https://www.latimes.com/archives/la-xpm-2000-mar-10-mn-7318-story.html [hereinafter "*Fears Grow*"]. The company, Warner-Lambert, knew some patients in clinical studies had developed severe liver damage, but it asserted to FDA that the risk was trivial. Scott Gottlieb, *Company*

Accelerated approval (1992) allows approval of medically important products using unvalidated surrogate markers, subject to confirmatory trials.[196] Priority review (1992) preferences review of drugs for serious conditions that would provide a significant improvement in safety or effectiveness. The program aims to shorten review from the standard of 10 months to 6 months.[197] As of 2007, some drugs approvals are rewarded with a priority review voucher, which can be sold for tens of millions of dollars and redeemed to expedite FDA review of any drug.[198] The breakthrough therapy designation (2014), which automatically includes fast track, targets products for serious conditions where preliminary evidence suggests a clinically significant improvement on a clinically significant endpoint compared with available therapies. These and other pathways[199] constitute a "thicket of special programs"[200] that nudges FDA toward the role of speedy approver and away from the role of gatekeeper. In 2020, 68% of newly approved drugs passed through one or more of these expedited pathways.[201]

FDA drug leadership embraced these programs, particularly Janet Woodcock, head of the Center for Drug Evaluation and Research. During her long tenure starting in 1994, Woodcock established a "track record of

Played Down Drug's Risks, Report Says, 322 BMJ 696, 696 (2001). When an FDA reviewer developed concerns over both safety and effectiveness, *see* David Willman, *REZULIN: Fast-Track Approval and a Slow Withdrawal*, L.A. TIMES (Dec. 20, 2000, 3:00 A.M.), https://www.latimes.com/nation/la-122001rezulin-story.html [hereinafter "*Fast-Track*"], his boss told Warner-Lambert he would terminate the reviewer if the company was not pleased. Gottlieb, *supra*. The reviewer was removed from the case and his report was withheld from the advisory committee. *Id.* FDA granted the drug approval through the Fast Track Program in 1997, and within three years, the drug was linked to nearly 400 deaths, thousands of liver injuries, and $2 billion in total revenue. Willman, *Fast-Track*, *supra*; David Willman, *The Rise and Fall of the Killer Drug Rezulin***,** L.A. TIMES (June 4, 2000), https://www.latimes.com/archives/la-xpm-2000-jun-04-mn-37375-story.html [hereinafter "*Rise and Fall*"]. British authorities pulled the drug in the same year FDA approved it, and FDA was aware of this decision. Willman, *Rise and Fall*, *supra*. Under heavy pressure from the public and angry physicians within FDA, the agency sought withdrawal of the drug in 2000. *Id.* A total of 35,000 lawsuits settled for $750 million. Jef Feeley, *Pfizer Ends Rezulin Cases With $205 Million to Spare*, BLOOMBERG (Mar. 31, 2009), https://tinyurl.com/4zhmasa4. In its approval of troglitazone, FDA appeared influenced by the possible benefit of the drug to diabetes patients and only sought withdrawal when drugs in the same class without severe liver toxicity came to market. Willman, *Fears Grow*, *supra*. FDA repeatedly downplayed troglitazone's risk of liver failure and death. Willman, *Rise and Fall*, *supra.* Troglitazone reveals an FDA caught up in innovation fever and willing to allow new drugs to market despite serious safety and effectiveness concerns. *See* Edwin A.M. Gale, *Troglitazone: The Lesson That Nobody Learned?*, 49 DIABETOLOGIA 1, 2 (2006).

196 *See infra* Section II.B.2.

197 U.S. FOOD & DRUG ADMIN., EXPEDITED PROGRAMS FOR SERIOUS CONDITIONS – DRUGS AND BIOLOGICS 25 (2014), https://www.fda.gov/media/86377/download.

198 *See* discussion *supra* note 170; Wang, *supra* note 170, at 389, 395.

199 *See supra* Table 2.

200 Sharfstein, *supra* note 169, at 123.

201 Alex M. Ebied, *New Drugs Approved in 2020*, 134 AM. J. MED. 1096, 1096 (2021).

championing quick approval of new medicines" and was criticized for tolerating inferior evidence of safety and efficacy.[202] At a 2018 event with the Innovative Health Initiative, she lamented the "old problem that's sort of holding us back, and that is our need for evidence generation—clinical evidence."[203] To call the need for clinical evidence a "problem" suggests Woodcock views evidence generation as an obstacle, rather than a feature, of FDA review. She advocates for "adaptive designs," and laments barriers to alternative trial designs such as "culture, habit, and loss of control."[204] This rhetoric is directly opposed to numerous experts who believe randomized controlled trials to be the gold standard and greatly worry about FDA's growing indifference toward clinical trials.[205] Similarly, FDA Commissioner Dr. Robert Califf has called for more "effective and efficient methods of evidence generation" than clinical trials.[206] He has also said, "Americans have told their Congresspeople we would rather take more risk and have earlier access,"[207] and called those critical of premarket review's erosion "overly cautious."[208]

2. Accelerated Approval & Surrogate Markers

Although drug clinical trials usually measure the impact on a clinical endpoint, i.e., a patient's symptoms, body functioning, or survival,[209] the FDCA allows for surrogate markers, or substitutes, that are "known" to predict clinical benefit.[210] For example, blood pressure is sometimes used to measure clinical

202 Sarah Owermohle, Adam Cancryn & Lauren Gardner, *Controversial Drug Approval Stokes Concern About Lack of a Permanent FDA Chief*, POLITICO (June 11, 2021, 3:50 P.M. EDT), https://www.politico.com/news/2021/06/11/fda-woodcock-controversial-drug-approval-493324.

203 The Innovative Health Initiative, *Janet Woodcock, FDA, on Future Innovation in Drug Development*, YOUTUBE (Oct. 1, 2018), https://www.youtube.com/watch?v=vcPMzHntlzY (2:00)

204 *Id.* at 5:13.

205 *See infra* Section II.B.3; Mayookha Mitra-Majumdar et al., *Analysis of Supportive Evidence for US Food and Drug Administration Approvals of Novel Drugs in 2020*, JAMA NETWORK OPEN (May 17, 2022), at 8–9 (expressing concern about "reduced evidence requirements for marketing authorization" and calling for a "reexamination" of FDA's approach); Caroline Chen, *FDA Increasingly Approves Drugs Without Conclusive Proof They Work*, PBS (June 26, 2018), https://www.pbs.org/newshour/health/fda-increasingly-approves-drugs-without-conclusive-proof-they-work (describing multiple experts' criticism of FDA allowing drugs to market with less evidence).

206 Califf, *supra* note 29, at 4.

207 *In the Bubble with Andy Slavitt*, STITCHER (Apr. 28, 2022), https://www.stitcher.com/show/in-the-bubble-with-andy-slavitt/episode/exclusive-fda-commissioner-on-covid-19-vaccine-for-kids-0-5-with-robert-califf-202759879 (15:38).

208 *See* Herder, *supra* note 4, at 842–43.

209 *See* Victor G. De Gruttola et al., *Considerations in the Evaluation of Surrogate Endpoints in Clinical Trials: Summary of a National Institutes of Health Workshop*, 22 CONTROLLED CLINICAL TRIALS 485, 487 (2001).

210 *See* FDCA § 507(e)(9)(A).

benefit, as opposed to the symptoms and sequelae of high blood pressure. Surrogate markers under the "known" standard encompass a wide variety of uses that are not necessarily controversial.[211]

However, the accelerated approval pathway tolerates several more levels of uncertainty. Launched in 1992 for serious unmet needs (such as cancer and HIV), it permits the use of surrogate measures "reasonably likely" to predict clinical benefit, although sponsors must conduct confirmatory trials after approval.[212] Unfortunately, we are likely to overestimate the validity of surrogate markers because most validation studies of surrogate markers review a biased subset of available trials.[213] Further, under accelerated approval, FDA has statutory authority to consider, in an approval decision, the severity and prevalence of the disease and the need for the drug[214]—considerations apart from safety and effectiveness. Therefore, although safety and effectiveness are still required, companies (and FDA) can stress other aspects of drugs and divert attention from serious effectiveness or safety issues during the approval process. The number of factors at play in accelerated approval arguably dilutes the salience of safety and effectiveness for drugs assessed under this pathway.

The most notorious example of accelerated approval is the story of aducanumab (Aduhelm) for Alzheimer's disease, approved in June 2021. Previously, FDA's nervous system drug advisory committee had recommended *against* approving the drug near-unanimously.[215] The drug did not show clinical benefit and caused potentially severe brain swelling.[216] Two clinical trials had been shut down in 2019 because an independent monitoring committee found aducanumab was not helping patients.[217] Some industry-funded patient groups supported the drug, in particular the Alzheimer's Association, which partnered with Biogen to hire celebrities like Samuel Jackson to create buzz and build public support for approval.[218] And although aducanumab did not show clinical

211 *See Table of Surrogate Endpoints That Were the Basis of Drug Approval or Licensure*, U.S. FOOD & DRUG ADMIN. (Feb. 28, 2022), https://www.fda.gov/drugs/development-resources/table-surrogate-endpoints-were-basis-drug-approval-or-licensure.

212 FDCA § 506(c).

213 Vinay Prasad et al., *The Strength of Association Between Surrogate End Points and Survival in Oncology: A Systematic Review of Trial-Level Meta-Analyses*, 175 JAMA INTERNAL MED. 1389, 1395 (2015).

214 *See* FDCA § 507(e)(9)(B), 506(c)(1)(A).

215 *See* Pam Belluck, Sheila Kaplan & Rebecca Robbins, *How an Unproven Alzheimer's Drug Got Approved*, N.Y. TIMES (July 19, 2021), https://www.nytimes.com/2021/07/19/health/alzheimers-drug-aduhelm-fda.html.

216 Pam Belluck & Rebecca Robbins, *Three F.D.A. Advisers Resign over Agency's Approval of Alzheimer's Drug*, N.Y. TIMES (June 10, 2021), https://www.nytimes.com/2021/06/10/health/aduhelm-fda-resign-alzheimers.html.

217 Belluck, Kaplan & Robbins, *supra* note 215.

218 Beth Snyder Bulik, *Celeb-Backed Alzheimer's Association Campaign Aims to Build*

benefit, thus precluding traditional approval, FDA was moved by the drug's impact on amyloid plaque, a protein hypothesized to accumulate in the brain of Alzheimer's patients.[219] So FDA ignored the lack of clinical benefit and granted "accelerated" approval based on the surrogate marker of amyloid plaques—a move that spurred intense criticism.[220]

On approval, three members of the advisory committee resigned, drawing broad press coverage.[221] Under pressure, Acting FDA Commissioner Janet Woodcock called for an inspector general investigation.[222] Many of the country's most prestigious hospitals said they would not prescribe the drug.[223] In a surprising move, the Center for Medicare and Medicaid Services issued a decision denying coverage except in clinical trials,[224] thus undermining FDA's approval. When Biogen set the price tag at $56,000 per year,[225] public curiosity arose about whether FDA was acting on behalf of public health or on the corporations it was built to regulate. Why else would FDA offer Biogen a massive windfall for little public benefit? FDA's embrace of aducanumab in spite of serious questions about effectiveness and safety suggests it was more concerned with addressing the unmet need of Alzheimer's disease rather than ensuring the drug was safe and effective.[226] Improper communications between FDA and Biogen suggested inappropriate corporate influence over the regulatory process.[227] FDA also made the bizarre move of pivoting to accelerated approval as a backdoor only after months of review suggested traditional approval was unlikely.[228] The story of aducanumab demonstrates how the malleable pathway of accelerated approval can lead to decisions that are misaligned with public health and with FDA's founding principles.

Grassroots Support for Biogen's Aducanumab Ahead of FDA Decision, FIERCE PHARMA (May 14, 2021, 11:22 A.M.), https://www.fiercepharma.com/marketing/alzheimer-s-association-campaign-more-time-supports-biogen-s-aducanumab-awaiting-fda.

219 Maulden, *supra* note 4, at 110, 118, 130.

220 Emanuel, *supra* note 4, at 1367.

221 Belluck, Kaplan & Robbins, *supra* note 215.

222 *Id.*

223 Arthur Allen, *Inside the Tactical Tug of War over the Controversial Alzheimer's Drug*, KHN (Feb. 16, 2022), https://khn.org/news/article/medicare-ruling-aduhelm-controversial-alzheimer-drug-critics.

224 *See* CTR. FOR MEDICARE & MEDICAID SERVS., *Monoclonal Antibodies Directed Against Amyloid for the Treatment of Alzheimer's Disease* (Apr. 7, 2022), https://www.cms.gov/medicare-coverage-database/view/ncacal-decision-memo.aspx?proposed=N&NCAId=305.

225 Zachary B. Wolf, *The Hard Math on the New $56,000 Alzheimer's Drug*, CNN (July 20, 2021, 8:11 P.M. EDT), https://www.cnn.com/2021/07/20/politics/aduhelm-alzheimers-drug-cost-what-matters/index.html.

226 *See* Maulden, *supra* note 4, at 132.

227 *See* HOUSE E&C COMM., THE HIGH PRICE OF ADUHELM'S APPROVAL: AN INVESTIGATION INTO FDA'S ATYPICAL REVIEW PROCESS AND BIOGEN'S AGGRESSIVE LAUNCH PLANS 15–21 (2022).

228 *Id.* at 21.

A survey of the data suggests that accelerated approval is a partial end run around premarket review. A September 2022 report by the HHS Office of the Inspector General revealed that during accelerated approval's lifetime, 104 of all 278 approved drug applications under the program have not completed confirmatory trials, suggesting that accelerated approval tolerates significant uncertainty in the drugs sold on the U.S. market.[229] More than half of confirmatory trials are completed late.[230] Yet FDA has not once used its authority to issue civil monetary penalties against a manufacturer for a late trial.[231]

Even if all confirmatory trials were completed promptly—which they are not—they would be unlikely to confirm the safety and effectiveness of drugs granted accelerated approval. A 2019 review of the 93 cancer drug indications granted accelerated approval from 1992–2017 found only 58 indications had a "confirmed benefit" after confirmatory trial.[232] And, of these 58 indications, only 19 reported a survival benefit in confirmatory trials.[233] Another 19 reported improvement in the *same surrogate* as the preapproval trial, and 20 reported improvement in a different surrogate.[234] Arguably, the safety and efficacy of drugs coming to market under accelerated approval are far less reliable, even after confirmatory trials.

Although the laxity of accelerated approval should be paired with a rapid correction mechanism, FDA has no easy way to withdraw drugs granted accelerated approval that fail confirmatory trials.[235] FDA's fraught withdrawal of bevacizumab's (Avastin's) indication for breast cancer was understood to be the "first and last time" it would withdraw accelerated approval in the face of industry opposition.[236] Given the time and expense, one director called the bevacizumab episode "Armageddon."[237] However, FDA recently accomplished a

229 Jeff Craven, *OIG Raises Concerns About Accelerated Approval Pathway*, REGUL. FOCUS (Sept. 30, 2022), https://www.raps.org/news-and-articles/news-articles/2022/9/oig-raises-concerns-about-accelerated-approval-pat.

230 Anjali D. Deshmukh, Aaron S. Kesselheim & Benjamin N. Rome, *Timing of Confirmatory Trials for Drugs Granted Accelerated Approval Based on Surrogate Measures from 2012 to 2021*, JAMA HEALTH FORUM (Mar. 31, 2023), at 1.

231 Anthony Barrueta et al., *Restoring Provider Confidence in FDA-Approved Drugs*, HEALTH AFFS. (June 28, 2022), https://www.healthaffairs.org/do/10.1377/forefront.20220623.43556; Steven Woloshin et al., *The Fate of FDA Postapproval Studies*, 377 NEW ENG. J. MED. 1114, 1116 (2017).

232 Bishal Gyawali, Spencer Phillips Hey & Aaron S. Kesselheim, *Assessment of the Clinical Benefit of Cancer Drugs Receiving Accelerated Approval*, 179 JAMA INTERNAL MED. 906, 908 (2019).

233 *Id.*

234 *Id.*

235 Daniel G. Aaron, I. Glenn Cohen & Eli Y. Adashi, *The FDA Struggle to Withdraw Makena: Problems with the Accelerated Approval Process*, 328 JAMA 2394, 2394 (2022).

236 Herder, *supra* note 4, at 849.

237 *Id.* at 841.

second accelerated approval withdrawal—for hydroxyprogesterone caproate (Makena), a drug used to prevent preterm birth that appears to have little clinical utility.[238] FDA had been trying to pull the drug since 2019 but had been stymied by the pandemic and cumbersome withdrawal requirements.[239] Hydroxyprogesterone caproate was responsible for more than $700 million in federal healthcare spending and was discovered to increase cancer risk in exposed offspring.[240] Again, FDA was lulled into approving an ineffective drug by the promise of addressing the public health problem of preterm birth (which can have serious complications for the baby).[241] Recent changes to accelerated approval in the Food and Drug Omnibus Reform Act have made withdrawal marginally easier by removing the hearing requirement, but the process is still cumbersome when a manufacturer does not voluntarily withdraw its drug.[242] Therefore, once products are granted accelerated approval, the statutory framework discourages FDA from withdrawing approval for any "dud" products.

Inevitably, accelerated approval changes the balance of FDA regulation to favor earlier access over certainty in safety and efficacy. But these examples and data suggest more: accelerated approval has become the leaky faucet of drug approvals, with no easy way to correct errors. The program's very existence incentivizes companies to target unvalidated surrogate markers, which may offer a surer pathway to market. Surrogate markers such as blood pressure are easier to target with a drug, yet, without measuring clinical outcomes (e.g., deaths), they can be misleading because they may fail to capture overall impact on health.[243] Beyond surrogate markers, the program vests discretion with FDA to allow drugs to market that meet a reduced standard, particularly when the need is great and political pressure and corporate influence are high. Therefore, it can be and has been misused to circumvent regular premarket review. Accelerated approval creates the discretion—and sets an ideological tone—for FDA to speed products

238 *FDA Commissioner and Chief Scientist Announce Decision to Withdraw Approval of Makena*, U.S. FOOD & DRUG ADMIN. (Apr. 6, 2023), https://www.fda.gov/news-events/press-announcements/fda-commissioner-and-chief-scientist-announce-decision-withdraw-approval-makena; Christina Jewett, *F.D.A. Panel Recommends Pulling Preterm Birth Drug from the Market*, N.Y. TIMES (Oct. 19, 2022), https://www.nytimes.com/2022/10/19/health/fda-preterm-birth-drug.html.

239 Aaron, Cohen & Adashi, *supra* note 235. Recent statutory amendments to accelerated approval struck the hearing requirement and may facilitate withdrawal somewhat. *See* Consolidated Appropriations Act, 2023 § 3210(a)(1)(A), Pub L. No. 117–328.

240 Aaron, Cohen, & Adashi, *supra* note 235, at 2395.

241 *Id.* at 2394.

242 *See* Jeff Craven, *FDA Withdraws Pre-Term Birth Drug Makena*, REGUL. FOCUS (Apr. 6, 2023), https://www.raps.org/news-and-articles/news-articles/2023/4/fda-withdraws-pre-term-birth-drug-makena.

243 Oriana Ciani et al., *Time to Review the Role of Surrogate End Points in Health Policy: State of the Art and the Way Forward*, 20 VALUE IN HEALTH 487, 489 (2017).

to market in conflict with its gatekeeper role.

3. Erosion of the Clinical Trial Requirement: Quantity and Quality

Imagine a world where drug access was freely provided without premarket review. In this world, it would be nearly impossible to measure efficacy. A group of patients with brain cancer trying a new drug might almost all die—but we would not know whether the patients lived longer or better because of the drug. Or a group of patients with a virus might all improve—but such is the natural course of most viruses. Clinical trials, which take place under carefully planned circumstances, help ensure that FDA's approvals are a reliable indication of drugs' safety and effectiveness.

But since the 1990s, FDA feared that clinical trial "failures" (i.e., null findings) were obstructing innovation.[244] Of course, some drugs are bound to have no clinical benefit, but FDA saw this as a problem. In addition, clinical trials became seen as too cumbersome and expensive,[245] a view heavily espoused by new industry-oriented leadership.[246] With these concerns in mind, industry, FDA, and Congress set out to "moderniz[e]" the clinical trial requirement.[247]

Traditionally, FDA required two randomized clinical trials to support the effectiveness of new drugs.[248] However, in the Food and Drug Administration Modernization Act (1997), a fully conservative Congress abolished the requirement for two clinical trials under certain circumstances, such as when a single trial coupled with confirmatory evidence could establish effectiveness.[249] This broad exception encourages FDA to accept any additional evidence submitted in addition to one randomized clinical trial. Between 1995 and 1997, 80.6% of indications for new drugs and biologics were supported by at least two pivotal trials.[250] Between 2015 and 2017, by comparison, 52.8% of indications were supported by at least two trials.[251] For opioids, which arguably should have

244 Jonah Campbell & Nicholas B. King, *"Unsettling Circularity": Clinical Trial Enrichment and the Evidentiary Politics of Chronic Pain*, 12 BIOSOCIETIES 191, 196–97 (2017) (describing FDA concerns about slowing of the drug pipeline and FDA's belief that even drugs with "literally thousands of years of clinical experience" were seeing clinical trial "failures").

245 *Id.*

246 *See supra* notes 202–208.

247 Campbell & King, *supra* note 244, at 197.

248 FDCA § 505(d)(5); U.S. FOOD & DRUG ADMIN., DEMONSTRATING SUBSTANTIAL EVIDENCE OF EFFECTIVENESS FOR HUMAN DRUG AND BIOLOGICAL PRODUCTS 4 (Dec. 2019), https://www.fda.gov/media/133660/download.

249 *Id.*; FDCA § 505(d).

250 Audrey D. Zhang et al., *Assessment of Clinical Trials Supporting US Food and Drug Administration Approval of Novel Therapeutic Agents, 1995-2017*, JAMA NETWORK OPEN, Apr. 21, 2020, at 5.

251 *Id.*

a higher bar for approval, only 29/48 of approved applications between 1997 and 2018 had at least *one* pivotal trial.[252] (A pivotal trial is a very significant trial that would count as one of the "two" traditionally required trials. Those opioids approved with zero pivotal trials likely piggybacked on published data or data submitted for other applications.[253]) These data suggest that the previous gold standard of two pivotal trials per indication has been eroded.[254] This change is important because studies can have serious blind spots or undetected biases, so the existence of two trials provides insurance that findings of a drug's effectiveness are real.[255] For example, the approval of OxyContin, the drug that ignited the opioid crisis,[256] was based on a single two-week trial.[257]

In addition, the data quality FDA considers acceptable has declined. Well-designed clinical trials should have several features: (1) randomization to make sure the groups exposed to different treatments do not have significant differences; (2) a control group; (3) double-blinding; (4) clinical endpoints;[258] and (5) proper accounting for study problems such as dropouts (Table 3).

Drug Category	Randomized	Controlled	Double-Blinded
All	89%	87%	80%
Cancer	47%	47%	27%
Orphan Drug	54%	50%	38%
Accelerated Approval	45%	45%	30%

Table 3: Features of clinical trials serving as basis for FDA approvals of novel therapeutic agents, 2005–2012 (rounded).[259]

252 James Heyward et al., *Key Evidence Supporting Prescription Opioids Approved by the U.S. Food and Drug Administration, 1997 to 2018*, 173 ANNALS OF INTERNAL MED. 956, 958 (2020). One might point out that all but one of these applications were for previously approved molecular entities. *Id.* at 960. However, given opioids' risks and the tenuous evidence they provide benefit as a whole, one would expect a higher bar for efficacy for new indications, not a lower one.

253 *Id.* at 957; *see* FDCA § 505(b)(2).

254 Some of this change may be due to increased development of orphan drugs, which are defined by a small patient population and thus for which two trials may be infeasible. However, the trend nevertheless exists and is not limited to orphan drugs, as shown in Table 3.

255 *See* Darrow et al., *supra* note 49, at 167.

256 Aaron, *supra* note 11, at 17–19; Daniel Aaron, *Opioid Accountability*, 89 TENN. L. REV. 611, 619 (2022) [hereinafter "*Opioid Accountability*"].

257 Kolodny, *supra* note 4, at 745.

258 *See supra* Section II.C.2.

259 Nicholas S. Downing et al., *Clinical Trial Evidence Supporting FDA Approval of Novel Therapeutic Agents, 2005-2012*, 311 JAMA 368, 372 (2014).

These data suggest that FDA is willing to forego essential clinical trial features for certain drug categories. The fact that FDA adheres to these features for most drugs suggests their importance. For comparison, 100% of neurology trials for novel therapeutic agents approved between 2005 and 2012 were randomized and double-blinded.[260]

Also concerning is a relatively new and biased trial method specifically for pain drugs. The "enriched enrollment randomized withdrawal" (EERW) trial has been used since 2006 to address high "failure rates" of pain management trials and to boost measurements of efficacy.[261] From 1997 to 2018, more than 40% of new opioid drug applications approved by FDA had no pivotal trial submitted, and of those with a pivotal trial, 59% had at least one EERW trial.[262] The EERW method includes an initial phase in which all patients receive the drug and "non-responders" (those who experience no benefit or who suffer severe adverse events) are removed. In the second phase, the "responders" are divided between a treatment and a placebo arm.[263] The rationale for measuring efficacy in responders is that, in "personalized medicine," people respond differently to drugs.[264] This type of trial leverages the rhetoric of individualism to create a biased sample that boosts efficacy and safety measures and generates evidence inapplicable to the population at large. Further, because many patients become dependent on opioids during the first phase, those who are randomly assigned to placebo in the second phase are prone to experience opioid withdrawal (including pain sensitivity),[265] which artificially boosts efficacy. EERW trials, which experts have called "cheating,"[266] are a derogation of FDA's standards.

FDA's acceptance of EERW trials began with private industry-funded meetings through the Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT), a private industry-sponsored group aimed at improving pain drug trial designs.[267] The meetings have been described as "pay-for-play" because pharmaceutical companies could pay as much as $35,000 for the opportunity to meet with FDA regulators.[268] These meetings hold the risk of capturing FDA regulators and aligning FDA with industry interests. FDA has since launched a public-private partnership called the Analgesic, Anesthetic, and Addiction Clinical Trials Translations, Innovations, Opportunities, and Networks

260 *Id.*

261 Campbell & King, *supra* note 244, at 191; Kolodny, *supra* note 4, at 745.

262 Heyward et al., *supra* note 252, at 959.

263 Campbell & King, *supra* note 244, at 193–94.

264 *Id.* at 194, 209.

265 Kolodny, *supra* note 4, at 746.

266 John Fauber, *FDA and Pharma: Emails Raise Pay-for-Play Concerns*, MEDPAGETODAY (Oct. 7, 2013), https://www.medpagetoday.com/painmanagement/painmanagement/42103.

267 *Id.*

268 *Id.*

Initiative (ACTTION), which absorbed IMMPACT and is led by IMMPACT's founders.[269] In founding ACTTION, FDA released a statement making it clear that it wanted opioids to be proven effective to be consistent with "literally thousands of years of clinical experience."[270] Because of its close ties with industry as part of ACTTION, FDA may be ignoring the possibility that the "frequent failures of clinical efficacy trials of opioid drug products"[271] might indicate the drugs were ineffective for many types of pain.

FDA's growing skepticism toward clinical trials[272] raises questions about the agency's ability to produce reliable information about the products it regulates. The most reliable information source for FDA approvals has become, at least in some instances, one of FDA's sworn enemies. Surely, this development cannot be good for protecting the public health through premarket review.

4. Off-Label Marketing

Off-label marketing represents a court-created path to evade premarket review. FDA generally approves drugs for a particular indication listed in a drug's labeling. After approval, physicians may prescribe the drug for so-called "off-label use," a long-accepted and important part of the practice of medicine. However, FDA for years prohibited "off-label marketing," given a history of manufacturers promoting approved drugs for unproven and unsafe uses.[273] For example, in 2000, Eli Lilly obtained approval for olanzapine (Zyprexa) to treat schizophrenia and bipolar disorder.[274] However, DOJ reached a $1.4 billion settlement in 2009 on the grounds that Eli Lilly was marketing the drug for dementia, Alzheimer's disease, depression, anxiety, sleep problems, and behavioral symptoms.[275] Patients could therefore be subjected to ineffective treatment coupled with serious risk: olanzapine is notorious for causing premature death through weight gain and diabetes.[276]

The conservative group Washington Legal Foundation (WLF), which receives funding from pharmaceutical companies, realized off-label marketing

269 Campbell & King, *supra* note 244, at 196.

270 *Id.*

271 *Id.*

272 *See* Califf, *supra* note 29.

273 Aaron S. Kesselheim & Michelle M. Mello, *Prospects for Regulation of Off-Label Drug Promotion in an Era of Expanding Commercial Speech Protection* 183, 186, in LYNCH & COHEN, *supra* note 23.

274 *Eli Lilly and Company Agrees to Pay $1.415 Billion to Resolve Allegations of Off-label Promotion of Zyprexa*, U.S. DEP'T JUST. (Jan. 15, 2009), https://www.justice.gov/opa/pr/eli-lilly-and-company-agrees-pay-1415-billion-resolve-allegations-label-promotion-zyprexa.

275 *Id.*

276 *See* Aaron S. Kesselheim & Jerry Avorn, *The Role of Litigation in Defining Drug Risks*, 297 JAMA 308, 309 (2007).

was a chance to undermine premarket review using the First Amendment. Beginning in the late 1990s, WLF pursued a series of cases challenging FDA authority to regulate off-label marketing as infringing on "commercial speech" of pharmaceutical companies.[277] The major breakthrough occurred in *United States v. Caronia*,[278] in which the Second Circuit overturned—under First Amendment grounds—the conviction of Alfred Caronia, who marketed the risky psychotropic drug Xyrem (gamma-hydroxybutyrate, or GHB) off-label for a hodgepodge of mental disorders.[279] GHB is also used as a date rape drug because of its strong nervous system effects, can cause life-threatening central nervous system and respiratory depression, and can trigger dependence and life-threatening withdrawal.[280] Caronia's marketing of the drug for so many uses raised safety and effectiveness concerns.

The Second Circuit overturned Caronia's conviction as an unconstitutional infringement of free speech,[281] despite the government's interest in "preserving the effectiveness and integrity of the FDCA's drug approval process."[282] Ultimately, the court believed it was not damaging premarket review because physicians could already prescribe drugs off-label, and therefore it was only liberalizing *speech*—and speech always promotes health in medical spaces by promoting "intelligent treatment decisions."[283] Further, prohibiting off-label speech, the court stressed, is "paternalistic[]."[284] The image of a sophisticated consumer evaluating choices on full information; the idea of government as an overbearing paternal figure; and the kneecapping of regulatory review on behalf of individual decisions are neoliberal ideas that stand in direct opposition to public health. The fact that the court thought it had a better grasp of what would preserve the integrity of premarket review than FDA itself[285] is a loud expression of judicial hubris and lack of deference to agency expertise.

WLF scored another victory in *Amarin Pharma, Inc. v. FDA*.[286] There, the

277 *See* Kapczynski, *supra* note 26, at 189 n.66.

278 703 F.3d 149 (2d Cir. 2012).

279 *Id.* at 152, 155.

280 Leo J. Schep et al., *The Clinical Toxicology of Gamma-Hydroxybutyrate, Gamma-Butyrolactone and 1,4-Butanediol*, 50 CLINICAL TOXICOLOGY 458, 459, 463 (2012).

281 *Caronia,* 703 F.3d at 168–69.

282 *Id.* at 166.

283 *Id.*

284 *Id.*

285 *Id.* The court reasoned that off-label *use* is legal, so "it does not follow that prohibiting the truthful promotion of off-label drug usage by a particular class of speakers would directly further the government's goal[] of preserving the efficacy and integrity of the FDA's drug approval process." *Id.* "[I]n the fields of medicine and public health, where information can save lives," ensuring accurate decisions through more speech—even commercially motivated, biased speech—"only furthers the public interest." *Id.* at 167 (internal quotation marks omitted).

286 119 F. Supp. 3d 196 (S.D.N.Y. 2015).

U.S. District Court for the Southern District of New York held that FDA cannot sustain a criminal enforcement action based on "truthful promotional speech alone,"[287] and it substituted its own analysis for FDA's of whether the defendant company's statements were truthful and non-misleading.[288] Of course, misleading speech carries the risk of fostering uses of a drug that FDA has not approved. Because premarket review is expert-based, the "misleadingness inquiry should operate to preserve agency authority over an assessment that the agency is most qualified to make."[289] WLF gloats on its website that *Amarin* "is a major milestone in WLF's two-decades-long effort to require FDA to abide by the First Amendment."[290]

After *Caronia* and its progeny, it is far easier for companies to market drugs for a range of conditions without generating the evidence for that use.[291] FDA has taken a soft enforcement approach through the issuance of non-binding guidance for off-label marketing.[292] Of course, FDA can still attempt to prove manufacturer claims are false or misleading, [293] but that places the burden on FDA to support an enforcement action when the burden was supposed to be placed on the manufacturer as part of premarket review.

The judicially created hole in premarket review through off-label promotion creates concrete risks to Americans' health. Off-label marketing invites the trifecta of health harm, little or unknown health benefits, and unaccountable corporate marketing; examples include gabapentinoids,[294] various psychiatric

287 *Id.* at 224.

288 *Id.* at 230–36.

289 *Amarin Pharma, Inc. v. FDA*, 129 HARV. L. REV. 2021, 2028 (2015).

290 *Amarin Pharma, Inc. v. FDA*, WASH. LEGAL FOUND. (June 12, 2015), https://www.wlf.org/case/amarin-pharma-inc-v-fda.

291 *But see* United States v. Facteau, Case No. 1:15-cr-10076-ADB (D. Mass. 2020), *under appeal*; *U.S. v. Facteau: District Court Finally Upholds Misdemeanor Convictions for Off-Label Promotion*, FOOD & DRUG LAW INST. (2021), https://www.fdli.org/2021/06/u-s-v-facteau-district-court-finally-upholds-misdemeanor-convictions-for-off-label-promotion ("After a string of losses dating back over fifteen years, *Facteau* is the first time the government has overcome a First Amendment defense to score a (partial) victory in an off-label promotion case."). Also, anti-fraud laws may have mitigated increases in off-label use stemming from *Caronia*, but this effect is not clear. *See generally* Aaron S. Kesselheim et al., *False Claims Act Prosecution Did Not Deter Off-Label Drug Use in the Case of Neurontin*, 30 HEALTH AFFS. 2318 (2011) (using a case study to discuss whether fraud cases have helped deter off-label use).

292 *See* U.S. FOOD & DRUG ADMIN., DISTRIBUTING SCIENTIFIC AND MEDICAL PUBLICATIONS ON UNAPPROVED NEW USES — RECOMMENDED PRACTICES 2 (Feb. 2014), https://www.fda.gov/media/88031/download ("[G]uidances describe the Agency's current thinking on a topic and should be viewed only as recommendations."); U.S. FOOD & DRUG ADMIN., MEDICAL PRODUCT COMMUNICATIONS THAT ARE CONSISTENT WITH THE FDA-REQUIRED LABELING QUESTIONS AND ANSWERS 2 (June 2018), https://www.fda.gov/media/133619/download (same).

293 Kapczynski, *supra* note 26, at 192.

294 *See* Alyssa M. Peckham et al., *Gabapentin for Off-Label Use: Evidence-Based or Cause for Concern?*, 12 SUBSTANCE ABUSE 1, 1–2, 7 (2018); Christopher W. Goodman & Allan S. Brett,

drugs including antipsychotics and antidepressants,[295] thalidomide and its analogues,[296] and direct oral anticoagulants.[297] 60% of U.S. physicians believe FDA should "definitely not" or "probably not" allow off-label marketing to physicians; 93% of the same group believe FDA should not allow off-label marketing to patients.[298] A Canada study found that off-label uses had 44% more adverse drug events compared with approved uses.[299] As former FDA Commissioner Margaret Hamburg has noted, liberation of off-label marketing threatens to provide a loophole for companies to seek approval for a trivial indication and then market broadly, and may sow confusion by incentivizing effectiveness claims even when other drugs are proven to be effective for the same use.[300] However, to the two judges on the Second Circuit siding with Caronia, public health benefits from more "information," and premarket review is paternalistic.

5. Real-World Evidence

In 2016, Congress passed the 21st Century Cures Act, which requires FDA to establish a program to allow the use of "real-world evidence" for two purposes: (1) for new indications of an already approved drug, and (2) for postapproval study requirements, such as confirmatory trials for drugs receiving accelerated approval.[301] Real-world evidence is data "from sources other than traditional clinical trials."[302] It is hard to think of a clearer expression of congressional intent to erode clinical trials than by defining a catchy new term

A Clinical Overview of Off-label Use of Gabapentinoid Drugs, 179 JAMA INTERNAL MED. 695, 695 (2019).

295 *See* Lisa E. Smilan, *The Off-Label Loophole in the Psychopharmacologic Setting: Prescription of Antipsychotic Drugs in the Nonpsychotic Patient Population*, 30 HEALTH MATRIX 233, 266–84 (2020); Aishwarya Vijay, Jessica E. Becker & Joseph S. Ross, *Patterns and Predictors of Off-Label Prescription of Psychiatric Drugs*, 13 PLOS ONE (2018), at 1, 2, 9; Jenna Wong et al., *Off-Label Indications for Antidepressants in Primary Care: Descriptive Study of Prescriptions from an Indication Based Electronic Prescribing System*, 356 BMJ (2017), at 1, 1–3.

296 Y. Tony Yang et al., *Thalidomide, Drug Safety, and Off-Label Prescribing: Lessons Learned from Celgene's Settlement*, 4 JAMA ONCOLOGY 915, 915 (2018).

297 Ann Marie Nevar & Roxana Mehran, *High Rates of Off-Label Prescribing and the Urgent Need for a Randomized Clinical Trial*, 5 JAMA CARDIOLOGY 692, 692–93 (2020); JOY C. ECKERT ET AL., MILKEN INSTIT. OF PUB. HEALTH AT GEORGE WASHINGTON U., THE MARKETING AND PRESCRIBING OF ANTICOAGULANTS IN THE DISTRICT OF COLUMBIA 35 (2018).

298 *See* Aaron S. Kesselheim et al., *Physicians' Perspectives on FDA Approval Standards and Off-label Drug Marketing*, 179 JAMA INTERNAL MED. 707, 708 (2019).

299 Tewodros Eguale et al., *Association of Off-Label Drug Use and Adverse Drug Events in an Adult Population*, 176 JAMA INTERNAL MED. 55, 55, 58 (2015).

300 Margaret A. Hamburg, *Innovation, Regulation, and the FDA*, 363 NEW ENG. J. MED. 2228, 2230 (2010).

301 FDCA § 505F(a).

302 FDCA § 505F(b).

encompassing all evidence *other than* clinical trials. Further, "real-world evidence" is a "god term," that is, a phrase that seems so obviously good as to inspire immediate loyalty.[303] Yet one study found that only 15% of clinical trials published in high-impact journals could be replicated using observational data.[304] Clinical trials, and their coveted randomization component, are irreplaceable.

This is not to say that other types of evidence are useless. But congressional requirements that FDA rely less on clinical trials solidify a troublesome trend. FDA had already used real-world evidence in certain instances, such as for some cancer drugs;[305] however, FDA has now considerably expanded its use and developed a regulatory framework.[306] As FDA has explained on its website under the heading "Why is this happening now?", FDA points to the use of computers and devices to "gather and store huge amounts of health-related data" and "sophisticated, new analytical capabilities."[307] Therefore, FDA is helping to justify this shift away from the gold-standard method of determining safety and efficacy.

6. The Fall of Drug Review

The erosion of drug premarket review began with lobbying of Congress to (1) create a "tangled thicket" of approval pathways, (2) pare back on randomized clinical trials, and (3) transition funding from appropriations to user fees paid by the pharmaceutical industry. Ideological capture, represented by the belief that patients would benefit from faster access to less tested drugs, eroded the drug vetting process. Over the past ten years, FDA has sidelined its major source of outside expertise: advisory committees. According to one study, committee meetings on initial approvals declined from 26 in 2012 to 8 in 2021.[308] Commissioner Dr. Califf has even suggested ending committee votes

303 *See* RICHARD M. WEAVER, THE ETHICS OF RHETORIC 212 (1953).

304 Victoria L. Bartlett et al., *Feasibility of Using Real-World Data to Replicate Clinical Trial Evidence*, JAMA NETWORK OPEN (Oct. 9, 2019), at 1, 7; *see also* Shirley V. Wang et al., *Using Real-World Data to Extrapolate Evidence from Randomized Controlled Trials*, 105 CLINICAL PHARMACOLOGY & THERAPEUTICS 1156, 1162 (2020) (finding utility in real-world evidence for filling evidence gaps for underrepresented patient groups in clinical trials, but noting that "these methods are not a substitute" for randomized clinical trials that welcome these groups).

305 U.S. FOOD & DRUG ADMIN., FRAMEWORK FOR FDA'S REAL-WORLD EVIDENCE PROGRAM 9 (Dec. 2018), https://www.fda.gov/media/120060/download.

306 *See generally id.* (describing FDA's framework for real-world evidence).

307 *Real-World Evidence*, U.S. FOOD & DRUG ADMIN. (Jan. 31, 2023), https://web.archive.org/web/20230307111003/https://www.fda.gov/science-research/science-and-research-special-topics/real-world-evidence.

308 C. Joseph Ross Daval et al., *Association of Advisory Committee Votes with US Food and Drug Administration Decision-Making on Prescription Drugs, 2010-2021*, JAMA HEALTH F. (July 7, 2023), at 1, 4.

altogether.[309] According to Genevieve Kanter, "FDA appears to have been looking for reasons to approve drugs,"[310] and so committee votes may be an obstacle to the goals of FDA leadership.

As to litigation, the judiciary was largely a bystander to the erosion of drug review, with two caveats. The first is off-label promotion, which courts turned into a substantial hole in premarket review.[311] The second is recent court intrusions into FDA's approval of mifepristone.[312] Courts may be increasingly willing to tread on scientific decisions—despite FDA's longstanding expertise in drug approvals. Of course, the judiciary may have had a more indirect role in undermining FDA by empowering the corporation, lubricating the flow of money in politics, and disempowering agencies.[313]

Together, these mechanisms of erosion largely reflect corporate influence on premarket review of drugs. It is pharmaceutical companies that complained about slow reviews,[314] lobbied for pro-business changes to the FDCA,[315] and have sought to ensure FDA commissioners are business-friendly. For example, current FDA Commissioner Dr. Robert Califf has received millions of dollars from life sciences companies,[316] believes the American public wants earlier access to drugs despite the risks,[317] and is a "big fan" of accelerated approval.[318] Dr. Califf

309 Genevieve P. Kanter, *The Real Question the FDA Is Asking Its Advisory Committees*, JAMA HEALTH F. (July 7, 2023), at 1, 2.

310 *Id.*

311 *See supra* Section II.B.4.

312 Daniel G. Aaron, Teneille R. Brown & Michael S. Sinha, *Court Intrusion into Science and Medicine—The Mifepristone Decisions*, 329 JAMA 1735, 1735 (Apr. 26, 2023).

313 *See infra* Section IV.B.

314 *See* Darrow, Avorn & Kesselheim, *supra* note 49.

315 Between 1999 and 2018, the pharmaceutical and health products industry spent $4.7 billion on lobbying. Olivier J. Wouters, *Lobbying Expenditures and Campaign Contributions by the Pharmaceutical and Health Product Industry in the United States, 1999-2018*, 180 JAMA INTERNAL MED. 688, 690 (2020). Between 1998 and 2005, the pharmaceutical and health products industry hired about 3,000 lobbyists and lobbied more than 1,400 federal bills. M. Asif Ismail, *Prescription for Power*, CTR. FOR PUB. INTEGRITY (Apr. 28, 2005), https://publicintegrity.org/politics/lobby-watch/prescription-for-power. More recently, the 21st Century Cures Act, which required FDA to use real-world evidence and weakened device regulation, *see infra* Section II.E.1, was one of the most-lobbied bills in the 114th Congress. According to one former representative, "[A] lot of groups have a lot of interest in every line in that bill." Sydney Lupkin, *Legislation That Would Shape FDA and NIH Triggers Lobbying Frenzy*, NPR (Nov. 25, 2016), https://www.npr.org/sections/health-shots/2016/11/25/503176370/legislation-that-would-shape-fda-and-nih-triggers-lobbying-frenzy.

316 Sarah Owermohle & Adam Cancryn, *Califf's Profitable Industry Ties Spark Fresh Criticism*, POLITICO PULSE (Nov. 23, 2021), https://www.politico.com/newsletters/politico-pulse/2021/11/23/califfs-profitable-industry-ties-spark-fresh-criticism-799053

317 *See supra* Section I.C.

318 Samantha Sault, *FDA Commissioner on Accelerated Approval, Misinformation, and Food*, BIO.NEWS (June 16, 2022), https://bio.news/bio-convention/fda-commissioner-on-accelerated-approval-misinformation-and-food.

prevailed over another potential nominee, Dr. Joshua Sharfstein—a public health professor—likely because of industry opposition.[319] Industry continues to fund 75% of FDA's drug budget, and even Dr. Califf admits that he "wish[es] the taxpayer paid for all the F.D.A. and there weren't user fees."[320] The user fee process has served as a "legislative vehicle" that has "favored industry through decreasing regulatory standards, shortening approval times, and increasing industry involvement in FDA decisionmaking."[321] Industry influence over FDA has eroded the agency's consumer protection role and increasingly allowed drugs to market with an inferior understanding of their safety and effectiveness.

Importantly, this Section has offered only a sampling of serious problems damaging the integrity of FDA's premarket review of drugs. It does not address special antibiotic pathways,[322] biologics, compounded drugs, generic drugs,[323] and "breakthrough" drugs. However, some of the critiques here apply to those programs as well. FDA has increasingly accepted a lower standard for drugs on the grounds that its role is predominantly speeding products to market, rather than consumer protection and evidence generation. One can wonder whether the opioid crisis and other serious drug-related harms could have been avoided through a properly functioning premarket-review regime.

C. Tobacco Products

The Family Smoking Prevention and Tobacco Control Act (TCA) of 2009[324] was a landmark statute that provided FDA premarket review authority over tobacco products. FDA had earlier asserted jurisdiction over tobacco products

319 *See* Matthew Perrone, *New FDA Chief Can't Come Soon Enough for Beleaguered Agency*, AP NEWS (Oct. 8, 2021), https://apnews.com/article/coronavirus-pandemic-joe-biden-science-business-health-62291dd94de2ec922bd9a76cbf389d66. During his prior tenure at FDA, Dr. Sharfstein "often clashed with drug and device makers over tougher regulations." Beth Snyder Bulik, *Woodcock to Step Up to Interim FDA Chief as She and Sharfstein Are Vetted for Permanent Job: Reports*, FIERCE PHARMA (Jan. 14, 2021), https://www.fiercepharma.com/pharma/woodcock-to-step-interim-fda-commissioner-under-biden-sharfstein-waiting-wings-media-reports. Dr. Sharfstein has stated that FDA's increasing rate of drug approvals necessitates "changes . . . to make sure the medicines are worthwhile for patients." Sydney Lupkin, *FDA Approves Drugs Faster Than Ever but Relies on Weaker Evidence, Researchers Find*, NPR (Jan. 14, 2020, 11:03 A.M.), https://www.npr.org/sections/health-shots/2020/01/14/796227083/fda-approves-drugs-faster-than-ever-but-relies-on-weaker-evidence-researchers-fi.

320 Christina Jewett, *F.D.A.'s Drug Industry Fees Fuel Concerns over Influence*, N.Y. TIMES (Sept. 15, 2022), https://www.nytimes.com/2022/09/15/health/fda-drug-industry-fees.html.

321 Mitchell, Trivedi & Bach, *supra* note 4, at 287.

322 Spencer Phillips Hey et al., *Influence, Integrity, and the FDA: An Ethical Framework*, 357 SCIENCE 876, 876 (2017).

323 *See generally* KATHERINE EBAN, BOTTLE OF LIES: THE INSIDE STORY OF THE GENERIC DRUG BOOM (2019) (describing serious problems with FDA oversight of generic drugs).

324 Pub. L. No. 111-31, 123 Stat. 1776 (2009) (codified as amended in scattered sections of 15 U.S.C. and 21 U.S.C.).

under the "1996 rule," but the Supreme Court held in 2000 that FDA may not regulate cigarettes as drugs or devices.[325] The TCA brought hope that the federal government would reign in a persistent top cause of death and disease in the United States—tobacco use and associated nicotine addiction[326]—largely through premarket review. With tobacco review, FDA may only authorize new tobacco products that are "appropriate for the protection of the public health."[327]

1. Statutory Defects

Despite hopes that premarket review might tackle the public-health harm from tobacco, the statute suffered from at least two defects. The first defect is that Congress exempted from review all tobacco products already on the market as of February 15, 2007.[328] Only new tobacco products required FDA review.[329] Therefore, cigarettes, which kill approximately 480,000 Americans each year,[330] were allowed to remain on the market. Of course, *pre*market review for these cigarettes was impossible since they were already marketed, but other premarket review regimes have applied post-hoc, such as premarket review of drugs (with the Drug Efficacy Study Initiative, or DESI[331]) and devices.[332] And although post-hoc review is laborious, cigarettes are also uniquely dangerous and in need of review.

It does not end there. The TCA provides a "substantial equivalence" pathway, analogous to device substantial equivalence,[333] that has allowed new cigarette (and other tobacco) products to come on the market despite serious public health harms simply because they resemble their predecessors.[334] Therefore, cigarettes, even new ones, can largely avoid premarket review.[335]

Still, the TCA was a compromise, evident in tobacco companies like Philip

325 FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 161 (2000).

326 In this paper, tobacco use refers to the use of products containing materials made or derived from tobacco, including nicotine from any source.

327 FDCA § 910(c)(2)(A).

328 *Id.* § 910(a).

329 *Id.* § 910(a)(2).

330 *Tobacco-Related Mortality*, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 28, 2020), https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/index.htm.

331 Carpenter, Greene & Moffitt, *supra* note 59, at 307–08.

332 HUTT ET AL., *supra* note 37, at 1204–05.

333 *See infra* Section II.E.1.

334 FDCA § 910(a)(2)(A)(i).

335 Not only does the TCA essentially carve out cigarettes, but it sanctioned a dangerous baseline. To be approved, new tobacco products must be "appropriate for the protection of the public health." FDCA § 910(c)(2)(A). The presence of cigarettes increased the likelihood that other tobacco products that are incrementally less harmful would enter the market even if they, too, carry significant harms.

Morris supporting it.[336] Therefore, it is possible the public health value of premarket review would derive from review not of existing products, but of truly new products. However, the TCA had one more exception: it provided authority over only four named categories of tobacco products.[337] Therefore, as a practical matter, FDA did not have jurisdiction over new types of tobacco products coming to market, such as e-cigarettes.[338]

A full-blown epidemic of youth e-cigarette use has emerged over the past ten years. At the 2019 peak, 27.5% of U.S. high schoolers used e-cigarettes.[339] E-cigarettes have become the new public-relations off-ramp for tobacco companies, allowing them to shift marketing resources to a "public health-promoting" product while addicting a new generation of youth.[340] As nearly all tobacco use begins in youth,[341] e-cigarettes have been a substantial boon to the business model of tobacco companies. And yet FDA did not have jurisdiction over them in order to conduct premarket review.

So, Congress exempted existing tobacco products from premarket review, but it did not provide FDA with jurisdiction over new types of tobacco products. These carveouts essentially negated the public health value of premarket review. This premarket framework is clearly concessionary to the tobacco industry. While FDA was not left without options,[342] these examples illustrate clear statutory erosion of premarket review and symbolize the difficulty in passing truly progressive legislation with a Congress heavily influenced by corporate power.

2. Ideological Capture and E-Cigarettes

Despite statutory defects in the TCA, FDA had one ray of hope to secure premarket review over tobacco products: the deeming provision.[343] Through this provision, Congress permitted FDA to "deem" other tobacco products subject to the statute.[344] It took seven years, until 2016, for FDA to deem e-cigarettes

336 Duff Wilson, *Philip Morris's Support Casts Shadow over a Bill to Limit Tobacco*, N.Y. TIMES (Mar. 31, 2009), https://www.nytimes.com/2009/04/01/business/01tobacco.html.

337 FDCA § 901(b) ("cigarettes, cigarette tobacco, roll-your-own tobacco, and smokeless tobacco").

338 FDA did have a hand in shaping the TCA and might have asked more questions about why it was only granted partial authority over tobacco products.

339 Aaron, *supra* note 4, at 870.

340 *Id.* at 880–85.

341 *Id.* at 874.

342 *See infra* Section II.C.2.

343 FDCA § 901(b) ("This chapter shall apply to all cigarettes, cigarette tobacco, roll-your-own tobacco, and smokeless tobacco and to *any other tobacco products that the Secretary by regulation deems* to be subject to this chapter.") (emphasis added).

344 *Id.*

subject to its authority, during which time e-cigarette use surged.[345] By 2016, the U.S. Centers for Disease Control and Prevention (CDC) had warned that youth e-cigarette use was "a major public health concern," having risen 900% between 2011 and 2015 among high school students.[346]

As FDA obtained authority over e-cigarettes in 2016, a major question emerged: how would it approach e-cigarettes? The plain text of the TCA requires all new tobacco products introduced after February 15, 2007 to undergo premarket review for being "appropriate for the protection of public health."[347] Clearly, Congress intended to keep off the market products that would harm or be neutral toward public health. FDA seemed intent on honoring Congress's words. The Deeming Rule laid the groundwork for premarket review, stating e-cigarette applications were due in 2018.[348]

However, shortly after the Deeming Rule took effect, President Trump took office and appointed Dr. Scott Gottlieb as FDA Commissioner. Shortly thereafter, Dr. Gottlieb announced a "comprehensive" approach to nicotine and tobacco,[349] pushing the due date for premarket applications to 2022 by guidance document.[350] He championed the potential of "innovation" to reduce tobacco harms, lauded how nicotine-delivering products are now "regulated" and present less risk, and extolled the value of science in the tobacco space.[351] Put simply, he believed in the power of e-cigarettes to displace traditional cigarettes, and so premarket review, paradoxically, could damage the public health.

Dr. Gottlieb's postponement of scientific review of tobacco products while lauding science was deeply ironic. Arguably, Dr. Gottlieb's claim to be following science in deferring premarket review is ideological capture dressed in the language of science. Indeed, FDA Commissioner Scott Gottlieb was the "most interest-conflicted commissioner in American history, by far," in the words of Daniel Carpenter, based on his industry ties.[352] Although the public health

345 Aaron, *supra* note 4, at 890.

346 U.S. SURGEON GEN., E-CIGARETTE USE AMONG YOUTH AND YOUNG ADULTS: A REPORT OF THE SURGEON GENERAL vii (2016) https://ecigarettes.surgeongeneral.gov/documents/2016_sgr_full_report_non-508.pdf.

347 FDCA § 910(a).

348 81 Fed. Reg. 28,974, 29,045 (May 10, 2016).

349 Scott Gottlieb, *Protecting American Families: Comprehensive Approach to Nicotine and Tobacco*, U.S. FOOD & DRUG ADMIN. (June 28, 2017), https://www.fda.gov/news-events/speeches-fda-officials/protecting-american-families-comprehensive-approach-nicotine-and-tobacco-06282017.

350 U.S. FOOD & DRUG ADMIN., EXTENSION OF CERTAIN TOBACCO PRODUCT COMPLIANCE DEADLINES RELATED TO THE FINAL DEEMING RULE 8 (Nov. 2017), https://wayback.archive-it.org/7993/20180124142324/https://www.fda.gov/downloads/TobaccoProducts/Labeling/RulesRegulationsGuidance/UCM557716.pdf.

351 Gottlieb, *supra* note 349.

352 Julia Belluz, *Scott Gottlieb, the New FDA Chief, Explained*, VOX (May 10, 2017),

approach to tobacco is rooted in a zero-trust approach of tobacco companies given their legacy of deceit,[353] Dr. Gottlieb's belief in e-cigarette innovation and trust in voluntary steps from e-cigarette companies[354] suggest a medicalized, privatized approach to regulation (which, arguably, is the opposite of regulation). Declaring his hope to "transform the tobacco marketplace," Dr. Gottlieb wrote in 2017 that "FDA is committed to striking an appropriate balance between protecting the public and fostering innovation in less harmful nicotine delivery."[355] The buzzwords "marketplace" and "innovation" highlight Dr. Gottlieb's neoliberal approach of tackling tobacco use not through FDA premarket review, but by skirting statutory requirements in order to liberalize e-cigarette use.[356] Dr. Gottlieb's preference for "deregulation" and making FDA authorization easier to secure likely won him the appointment from President Trump, who had stated his goal to "remake" the FDA.[357]

Dr. Gottlieb soon regretted the FDA policy postponing premarket review of e-cigarettes. Just one year later, he made a startling admission of his and the agency's mistakes: "We didn't predict what I now believe is an epidemic of e-cigarette use among teenagers. Today we can see that this epidemic of addiction was emerging when we first announced our plan last summer."[358] These are

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https://www.vox.com/2017/3/10/14887290/scott-gottlieb-fda-trump. And, no doubt, Dr. Gottlieb's 180-degree policy change from the deeming rule was fueled and enabled by trends in Supreme Court jurisprudence promoting the unitary executive and top-down control over agencies. *See, e.g.*, Seila Law, LLC v. CFPB, 140 S. Ct. 2183, 2211 (2020).

353 *See* Kelly D. Brownell & Kenneth E. Warner, *The Perils of Ignoring History: Big Tobacco Played Dirty and Millions Died. How Similar Is Big Food?*, 87 MILBANK Q. 259, 259 (2009) ("The tobacco industry had a playbook, a script, that emphasized personal responsibility, paying scientists who delivered research that instilled doubt, criticizing the 'junk' science that found harms associated with smoking, making self-regulatory pledges, lobbying with massive resources to stifle government action, introducing "safer" products, and simultaneously manipulating and denying both the addictive nature of their products and their marketing to children.").

354 *See* Stanton A. Glantz, *FDA Commissioner Scott Gottlieb Is Falling into an Old Industry Trap by Expressing Willingness to Partner on "Youth E-Cigarette Prevention"*, UCSF CTR. FOR TOBACCO CONTROL RSCH. & EDUC. (Nov. 5, 2018), https://tobacco.ucsf.edu/fda-commissioner-scott-gottlieb-falling-old-industry-trap-expressing-willingness-partner-%E2%80%9Cyouth-e-cigarette-prevention%E2%80%9D.

355 Scott Gottlieb & Mitchell Zeller, *A Nicotine-Focused Framework for Public Health*, 377 NEW ENG. J. MED. 1111, 1113 (2017).

356 Aaron, *supra* note 4, at 847.

357 Joe Neel, *Trump Chooses Dr. Scott Gottlieb to Head Food and Drug Administration*, NPR (Mar. 10, 2017), https://www.npr.org/sections/health-shots/2017/03/10/519703946/trump-to-nominate-dr-scott-gottlieb-to-head-food-and-drug-administration; Katie Thomas, *F.D.A. Nominee, Paid Millions by Industry, Says He'll Recuse Himself If Needed*, N.Y. TIMES (Mar. 9, 2017), https://www.nytimes.com/2017/03/29/health/fda-nominee-scott-gottlieb-recuse-conflicts.html.

358 *Statement from FDA Commissioner Scott Gottlieb, M.D., on New Steps to Address Epidemic of Youth E-Cigarette Use*, U.S. FOOD & DRUG ADMIN. (Sept. 11, 2018), https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-

shocking admissions from an FDA Commissioner who one year earlier nixed premarket review while espousing the value of science and public health.

As gatekeeper, FDA shirked congressionally required premarket review by not enforcing the statutory mandate, thereby carving a gap between Congress's words and their enforcement.[359] Public health groups, which were alarmed by the CDC's reports about youth e-cigarette use,[360] sued FDA on the grounds that its guidance document postponing premarket review was a legislative rule and an abdication of FDA's responsibilities under the TCA.[361] The public health groups won, and the District of Maryland invalidated the guidance. The judge determined that FDA's policy was "tantamount to an amendment to the Tobacco Control Act," and that "these requirements . . . run 180 degrees counter to the plain meaning of the statute."[362] These are strong words from an Article III court and an indictment of FDA's hands-off approach to e-cigarettes. Indeed, FDA's approach reflects neoliberalism in that it returned the decision to use e-cigarettes to individual consumers despite a statutory responsibility to conduct premarket review.

Extraordinarily, the Court crafted specific injunctive relief to remedy FDA's illegal actions:

> The issue is whether this case presents those "extraordinary circumstances" that call for more than a simple remand or vacatur. . . .
>
> Given the uncertainty in the efficacy of e-cigarettes as smoking cessation devices, the overstated effects that a shorter deadline may have on manufacturers, the Industry's recalcitrance, the continued availability of e-cigarettes and their acknowledged appeal to youth, and the clear public health emergency, I find that a deadline is necessary.[363]

The judge ordered applications for new tobacco products covered by the Deeming Rule to be submitted within 10 months, and for the applications to be reviewed within an additional year (or else products must be "subject to"

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md-new-steps-address-epidemic-youth-e-cigarette-use.

359 Industry filed suit to avoid premarket review of e-cigarettes writ large. However, courts rebuffed this effort. *See* Nicopure Labs, LLC v. FDA, 944 F.3d 267, 281 (D.C. Cir. 2019) (holding that the subjection of e-cigarettes to premarket review is congressionally mandated and therefore cannot be challenged under the APA).

360 Aaron, *supra* note 4, at 847.

361 Am. Acad. of Pediatrics v. FDA, 379 F. Supp. 3d 461, 469 (D. Md. 2019).

362 *See id.* at 497–98 (cleaned up).

363 Am. Acad. of Pediatrics v. FDA, 399 F. Supp. 3d 479, 481, 486–87 (D. Md. 2019).

enforcement action).[364] The judge's strong relief for plaintiffs indicates the level of FDA's deviation from the statute amid a public health emergency. This decision had an immediate effect on the e-cigarette market by subjecting e-cigarette companies to an expedited regime in which their products were analyzed for their public health merit. Therefore, companies that addicted youth could be at risk of market removal. E-cigarette use appeared to decline in 2020 and 2021, although the COVID-19 pandemic interfered with data tracking, making it difficult to ascertain youth levels of e-cigarette use.[365]

In sum, Dr. Gottlieb's ideology appeared to displace the rule of law and public health concerns with e-cigarettes. Thankfully, by ordering FDA to institute premarket review as it was already required to do under the TCA, the court protected the American public from an e-cigarette wild west.

3. DOJ and Legal Wrangling

The *American Academy of Pediatrics v. FDA* lawsuit teed up the question of how premarket review would operate under a court order, but FDA's actions were not more encouraging. Pursuant to the court order, a rush of applications arrived in September 2020, and FDA had one year of discretion before the court would expect enforcement. FDA needed to decide what would happen to products on the market in the interim. The agency could have enforced against youth-addicting products immediately for lack of marketing authorization under the TCA.[366] Further, most youth-appealing flavored e-cigarettes were immediate targets for enforcement under a 2020 FDA guidance.[367]

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364 *Id.* at 487. The order requiring FDA to review applications within one year has important ambiguity. It states, "New Products for which applications have been timely filed may remain on the market without being subject to FDA enforcement actions for a period not to exceed one year from the date of application while FDA considers the application." *Id.* This order does not *per se* require FDA to review applications within one year but requires that any new products with unreviewed applications must be "subject to" FDA enforcement actions after one year. Of course, "subject to" can be fairly general or literally mean *subjected to enforcement*. See *Merriam-Webster*, "subject to," https://www.merriam-webster.com/dictionary/subject%20to (Accessed Aug. 25, 2023) (defining "subject to" as "affected by or possibly affected by (something)"). Because the judge wrote earlier in the opinion, "I will impose . . . a one-year deadline for approval," 399 F. Supp. 3d at 481, and was perturbed by a pressing public health emergency, it is likely he intended for FDA to take action on products within a year. It is dubious that the judge would have been satisfied by the mere possibility of enforcement against e-cigarettes.

365 *Youth E-cigarette Use Remains Serious Public Health Concern amid COVID-19 Pandemic*, U.S. FOOD & DRUG ADMIN. (Sept. 30, 2021), https://www.fda.gov/news-events/press-announcements/youth-e-cigarette-use-remains-serious-public-health-concern-amid-covid-19-pandemic.

366 FDCA § 910(c)(1)(A).

367 U.S. FOOD & DRUG ADMIN., ENFORCEMENT PRIORITIES FOR ELECTRONIC NICOTINE DELIVERY SYSTEMS (ENDS) AND OTHER DEEMED PRODUCTS ON THE MARKET WITHOUT PREMARKET AUTHORIZATION 31 (April 2020), https://www.fda.gov/media/133880/download.

Instead of enforcing, FDA took the approach that products with pending applications can remain on the market for one year while the application is reviewed.[368] However, this approach continued past the one-year period when the court expected FDA to earnestly begin enforcement. Even today, most of the top-market-share products (e.g., Juul) still have pending applications and have not been removed from the market. Therefore, FDA has essentially continued an enforcement discretion policy for e-cigarettes even after losing in *American Academy of Pediatrics v. FDA*. FDA has defended itself by issuing a statement, precisely on the one-year review deadline, that it had taken action on more than 90% of timely-submitted applications.[369] However, it admitted that 75% of *all* applications were from a single applicant and were disposed of through an administrative process for missing required contents.[370] And, again, actions were not taken on high-market-share products.

Frustrated, the plaintiffs in *American Academy of Pediatrics* moved to reopen the case in November 2021. They noted that "FDA has not issued a single PMTA [premarket tobacco product application] decision on any of the products with the largest market share in the market as a whole or in the youth market."[371] Asking for periodic status reports, the plaintiffs noted that e-cigarette products "remain on the market for an indeterminate amount of time, despite receiving no FDA authorization."[372] The court agreed, finding this status quo was "inconsistent" with the court's previous judgment,[373] and ordered FDA to submit status reports every 90 days.[374] FDA has made progress since then, although some of the highest-market-share products remain on the market. In the absence of enforcement, e-cigarette companies now regularly ignore warning letters for

368 *Id.* at 27; *Perspective: FDA's Progress on Tobacco Product Application Review and Related Enforcement*, U.S. FOOD & DRUG ADMIN. (Sept. 9, 2021), https://www.fda.gov/tobacco-products/ctp-newsroom/perspective-fdas-progress-tobacco-product-application-review-and-related-enforcement; *Deemed New Tobacco Product Applications Lists*, U.S. FOOD & DRUG ADMIN. (Aug. 9, 2021), https://www.fda.gov/tobacco-products/market-and-distribute-tobacco-product/deemed-new-tobacco-product-applications-lists#list%20of%20deemed.

369 *FDA Makes Significant Progress in Science-Based Public Health Application Review, Taking Action on Over 90% of More Than 6.5 Million 'Deemed' New Tobacco Products Submitted*, U.S. FOOD & DRUG ADMIN. (Sept. 9, 2021), https://www.fda.gov/news-events/press-announcements/fda-makes-significant-progress-science-based-public-health-application-review-taking-action-over-90.

370 *Id.*

371 *RE: American Academy of Pediatrics, et al., v. FDA* at 2, Am. Acad. of Pediatrics v. FDA, No. 8:18-cv-00883 (D. Md. Nov. 15, 2021), ECF No. 195.

372 *Id.* at 3.

373 Letter Order at 2, Am. Acad. of Pediatrics v. FDA, No. 8:18-cv-00883 (D. Md. Apr. 15, 2022), ECF No. 201.

374 Revised Remedial Order at 1, Am. Acad. of Pediatrics v. FDA, No. 8:18-cv-00883 (D. Md. Apr. 15, 2022), ECF No. 202.

failure to obtain marketing authorization.[375] Even so, FDA continues to assert that new tobacco products require premarket authorization for marketing.[376] Strong words, soft touch.[377]

What can explain the gap between FDA's assertion that premarket review is required but a lack of enforcement of the premarket review requirement? The most likely cause is law. Enforcement is a legal mechanism that requires FDA lawyers to be on board. Further, as FDA lacks independent litigating authority, it must secure cooperation from DOJ to go to court. A recent unprecedented study of the FDA–DOJ interactions in enforcement has confirmed that DOJ vetoes numerous enforcement actions that FDA would otherwise bring.[378] Further, a recent report FDA commissioned of its tobacco center found that DOJ was a significant barrier to tobacco enforcement.[379] Most likely, lawyers at DOJ would rather premarket review decisions be made on the scientific level rather than as a matter of law, and therefore products with applications are allowed to remain on the market pending scientific review.

Indeed, a scientific decision is more likely to survive in court given judges' limited expertise. Further, FDA is required to review applications within 180 days,[380] a timeline it could not meet given the millions of applications, and therefore a manufacturer could claim it was denied the opportunity to even go through premarket review before enforcement. While these arguments hold some merit, premarket review is legally binding and should be enforced as such. Recent statements by FDA officials support the theory that lawyers vetoed enforcement of premarket review requirements. In the words of Mitch Zeller, director of FDA's tobacco regulatory efforts, "*technically*, for the newly deemed products, any product that is on the market without what is required by law to be a marketing authorization, *technically* that product is marketed unlawfully and subject to enforcement action at our discretion."[381] That a center director would attend a major tobacco conference and repeat twice that the premarket review requirement is only *technical* is shocking and likely stems from DOJ lawyers not treating premarket review requirements as binding in letter or spirit.

375 Nicholas Florko & Elissa Welle, *The FDA Stands By as the Vaping Industry Flouts Its Orders*, STAT (Aug. 24, 2022), https://www.statnews.com/2022/08/24/the-fda-stands-by-as-the-vaping-industry-flouts-its-orders.

376 *Perspective*, *supra* note 368.

377 Still, FDA is trying to catch up with the millions of applications it received.

378 C. Joseph Ross Daval, *Litigating Authority for the FDA*, 100 WASH. U. L. REV. 175, 192, 214 (2022).

379 REAGAN-UDALL FOUNDATION, OPERATIONAL EVALUATION OF CERTAIN COMPONENTS OF FDA'S TOBACCO PROGRAM 22–23 (2022).

380 FDCA § 910(c)(1)(A).

381 SRNT PR, *SRNT 2022 FDA Special Session*, YOUTUBE (Mar. 16, 2022), https://www.youtube.com/watch?v=NVvYl-luA4M (19:07).

The inevitable consequence of FDA's and DOJ's non-enforcement is the marketing of tobacco products before FDA review. Despite clear congressional intent for *pre*market review, the future of e-cigarette use among youth will depend largely on postmarket action.

4. Litigation over Scientific Decisions

Despite attempts to shield FDA decisions by making them on the scientific front—as opposed to the legal front—the deep financial resources of the tobacco industry and a willingness to litigate have hampered FDA review regardless. As of March 2022, seven cases led to stays of market denial orders, and thus essentially prevented FDA enforcement against these companies.[382] In addition, there were 48 cases for judicial review of specific market denial orders for tobacco products, 44 of which were pending.[383] This is a huge amount of litigation facing an agency that is trying to establish its tobacco premarket review program, and it no doubt drains staff resources, thus delaying premarket review even further. In June 2022, FDA denied marketing authorization to Juul, perhaps the biggest instigator of the youth e-cigarette epidemic, and one day later, a court administratively stayed the decision.[384]

As a result of litigation, FDA has taken the approach of staying its own market denial orders in order to buy more time to rereview its decisions, likely in the hopes of reducing the odds of a litigation loss. For example, in July 2022, FDA stayed its denial of Juul products, promising not to take enforcement action during the stay plus an additional thirty days.[385] Essentially, FDA is allowing Juul to remain on the market despite lack of authorization to minimize litigation risk, indicating the power of law to upend FDA decision making. Sure enough, Juul's D.C. Circuit case against FDA is now in abeyance[386]—but at what cost to public health? In 2022, FDA predicted it will clear its backlog of high-market-share applications (i.e., those filed by September 9, 2020) by June 30, 2023.[387] However, given litigation, those decisions may not be effective until years later.

382 *Id.* at 15:06.

383 *Id.*

384 Tom Murphy, *Juul Can Keep Selling E-cigarettes as Court Blocks FDA Ban*, AP NEWS (June 24, 2022), https://apnews.com/article/science-politics-health-tobacco-industry-regulation-a52e9928a95908c3556a411a3738cef7.

385 *FDA Denies Authorization to Market JUUL Products*, U.S. FOOD & DRUG ADMIN. (June 23, 2022), https://www.fda.gov/news-events/press-announcements/fda-denies-authorization-market-juul-products; Matthew Perrone, *Juul, FDA Suspend Court Case While E-Cigarette Ban on Hold*, AP News (July 6, 2022, 8:06 PM EDT), https://apnews.com/article/science-health-tobacco-industry-regulation-f0734a2149ac6578015901ee144ddc76.

386 Order, Juul Labs, Inc. v. FDA, No. 22-1123 (D.C. Cir. July 7, 2022), ECF No. 1953851.

387 Status Report at 1–3, Am. Acad. of Pediatrics v. FDA, No. 8:18-cv-00883 (D. Md. May 13, 2022), ECF No. 205.

In an update to the court in January 2023, FDA described the challenges of facing "more than 50 lawsuits challenging its e-cigarette marketing decisions" and the resulting drain on agency resources.[388] It updated the expected date for clearing the backlog to December 31, 2023[389]—but "unauthorized e-cigarettes continue to launch."[390]

5. The Fall of Tobacco Review

Premarket review of tobacco products is embattled. Thankfully, cigarette marketing and sales, one of the biggest killers of Americans, have waned over the past two decades in the wake of federal and state regulatory and litigation efforts.[391] On the other hand, e-cigarette use has become endemic among youth, peaking in 2019 and still high. Many unauthorized e-cigarettes remain on the market, with some companies representing the largest market shares among youth largely free from enforcement (including Juul and Puff Bar),[392]applications pending. Other available e-cigarettes likely do not have applications pending, including thousands of products "pouring into the US" from China, according to one news article[393]—the exact opposite of what premarket review is supposed to achieve. FDA is stuck on a never-ending treadmill, unable to catch up with new products, and apparently unwilling to boldly use its enforcement tools in the meantime. FDA has not authorized a single flavored e-cigarette (other than tobacco flavor),[394] yet it is flavored e-cigarettes that drive youth use.[395]

And while e-cigarette companies may have a temporary incentive to "lay

388 Status Report at 2, Am. Acad. of Pediatrics v. FDA, No. 8:18-cv-00883 (D. Md. Jan. 24, 2023), ECF No. 211.

389 *Id.*

390 Matthew Perrone, *FDA Warns Stores to Stop Selling Elf Bar, the Top Disposable E-Cigarette in the US*, AP NEWS (June 22, 2023, 1:02 PM EDT), https://apnews.com/article/ecigarettes-elf-bar-vapes-4353becf747846b528ec2aea609ed2f9.

391 U.S. SURGEON GEN., THE HEALTH CONSEQUENCES OF SMOKING—50 YEARS OF PROGRESS 18 (2014).

392 FDA has, however, issued an import alert for Elf Bar. *FDA Roundup: May 19, 2023*, U.S. FOOD & DRUG ADMIN. (May 19, 2023), https://www.fda.gov/news-events/press-announcements/fda-roundup-may-19-2023. Elf Bar is now the top disposable e-cigarette on the U.S. market. Perrone, *supra* note 390. Elf Bar may not have submitted an application to FDA, which could explain FDA's use of enforcement tools, in contrast with Juul and Puff Bar.

393 Matthew Perrone, *Thousands of Unauthorized Vapes Are Pouring into the US Despite the FDA Crackdown on Fruity Flavors*, AP NEWS (June 26, 2023, 7:43 PM EDT), https://apnews.com/article/fda-vapes-vaping-elf-bar-juul-80b2680a874d89b8d651c5e909e39e8f.

394 *FDA Denies Marketing of Two Vuse Solo Menthol E-Cigarette Products*, U.S. FOOD & DRUG ADMIN. (Mar. 17, 2023), https://www.fda.gov/news-events/press-announcements/fda-denies-marketing-two-vuse-solo-menthol-e-cigarette-products.

395 Of youth e-cigarette users, 85% use flavored e-cigarettes. *More than 2.5 Million Youth Reported E-Cigarette Use in 2022*, CTRS. FOR DISEASE CONTROL & PREVENTION (Oct. 6, 2022, 1:00 P.M. ET), https://www.cdc.gov/media/releases/2022/p1007-e-cigarette-use.html.

low" while FDA reviews their applications, it is doubtful these companies will not push for more youth use if they receive marketing authorization. Indeed youth-oriented marketing has been a mainstay of e-cigarette manufacturers like Juul.[396] Senator Dick Durbin has criticized FDA for this status quo:

> [A]ddictive e-cigarettes like JUUL are only on the store shelves because the FDA has given the tobacco companies a free pass to sell their vaping products. . . . So today, I am calling on the FDA to immediately halt its enforcement discretion and remove all unauthorized e-cigarettes from the market. Don't allow JUUL and other tobacco companies one more day of endangering our children.[397]

While the Senator's comments might be additionally targeted at Congress as well as FDA and DOJ lawyers for disfavoring enforcement,[398] he is not wrong to look to the failures of FDA review in attributing responsibility for youth e-cigarette addiction. The tobacco story is one of (1) statutory defects; (2) presidential control over selection of the FDA Commissioner, which placed the industry-friendly Dr. Gottlieb in that role; (3) Dr. Gottlieb's faith in the goodwill of tobacco companies and the safety of new tobacco technology even without the regulatory guardrails of premarket review; and (4) law, lawyers, and judges preventing an agency from enforcing the law and clearing the market. In one case, a court insulated an entire category of tobacco products (premium cigars) from premarket review.[399] As FDA Commissioner Robert Califf has opined, the tobacco industry "has amazing capabilities on the legal front. If we make one single error in the process, we can be set back for years in these applications."[400] Califf's words point to the threat of lawsuits, and the resultant internal wrangling with FDA and DOJ lawyers, as the current problem undermining tobacco premarket review.

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396 Aaron, *supra* note 4, at 881–84.

397 *Durbin: I'm Calling on FDA to Immediately Halt Its Enforcement Discretion and Remove All Unauthorized E-Cigarettes from the Market*, DICK DURBIN: ILLINOIS (May 18, 2022), https://www.durbin.senate.gov/newsroom/press-releases/durbin-im-calling-on-fda-to-immediately-halt-its-enforcement-discretion-and-remove-all-unauthorized-e-cigarettes-from-the-market.

398 As discussed above, FDA continually asserts that products require premarket review to be legally marketed, and therefore the blockade is likely in terms of enforcement.

399 Cigar Ass'n of Am. v. FDA, 480 F. Supp. 3d 256, 281 (D.D.C. 2020); *see also* Memorandum Opinion and Order, Cigar Ass'n of Am. v. FDA, No. 1:16-cv-01460-APM (D.D.C. July 5, 2022), ECF No. 268 (holding that FDA's deeming of premium cigars subject to the Tobacco Control Act was arbitrary and capricious).

400 Celine Castronuovo, *FDA Must Be 'Judicious' in Vaping Enforcement, Califf Says*, BLOOMBERG LAW (May 19, 2022), https://news.bloomberglaw.com/health-law-and-business/fda-must-be-judicious-in-vaping-enforcement-califf-says.

D. Food Additives

For substances that can be so harmful to human health, it is surprising how far the regulation of food additives[401] has fallen in the last six decades. Food additives by law require premarket review.[402] However, today, nearly all food additives avoid premarket review through a loophole known as "generally recognized as safe" (GRAS),[403] in which industry evaluates safety at its discretion and often brings new additives to market without FDA oversight or awareness.[404] There are two general types of GRAS substances of public health concern. First, many long-used GRAS substances have been proven toxic or directly harmful to human health, including sugar, trans fats, and salt.[405] Other GRAS substances may be lesser-known chemicals suspected of carcinogenicity or other harms. For example, butylated hydroxyanisole, widely added to fatty foods as a preservative, is "reasonably anticipated to be a human carcinogen," according to the National Toxicology Program.[406]

Congress passed the Food Additives Amendment in 1958 in response to increasing concern about chemicals added to foods.[407] It was subtitled "An Act [t]o protect the public health by amending the FDCA to prohibit the use in food of additives which have not been adequately tested to establish their safety."[408] It provided for premarket review of food additives.[409] Food additives were defined broadly: "any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food."[410] Industry carried the burden of showing a proposed additive was safe for a particular use.[411] Congress also recognized that some food additives were in such prevailing use that premarket review was unnecessary.[412] Therefore, it excluded from the statutory definition of food additive (and therefore from premarket review) any substance that is GRAS.[413] Arguably, Congress's use of vague language vested a resource-

401 In this article, I use "food additives" to refer to substances added to food, other than color additives. Legally, however, a substance that is generally recognized as safe (GRAS) is not a food additive.

402 FDCA § 409.

403 FDCA § 201(s).

404 Faustman et al., *supra* note 4, at 1261.

405 *See, e.g.*, FREUDENBERG, *supra* note 74, at 46–48.

406 *Butylated Hydroxyanisole*, REP. ON CARCINOGENS, NAT'L TOXICOLOGY PROGRAM (15th ed., 2021), https://ntp.niehs.nih.gov/ntp/roc/content/profiles/butylatedhydroxyanisole.pdf.

407 62 Fed. Reg. 18938 (Apr. 17, 1997).

408 Food Additives Amendment of 1958, Pub. L. No. 85-929, 52 Stat. 1041.

409 FDCA § 409.

410 FDCA § 201(s).

411 FDCA § 409(c)(3); 62 Fed. Reg. 18939.

412 *Id.* at 18938–39.

413 *Id.*

starved food center at FDA with discretion to swallow almost all food additive regulation into the GRAS exception.

At first, despite the GRAS exception, FDA exerted significant premarket authority. FDA generally knew what substances were added to food because, immediately after the Food Additives Amendment, FDA created a list of GRAS substances, which it updated consistently.[414] In 1974, FDA promulgated regulations creating a premarket petition process for GRAS status, which, as FDA later clarified, asked for the same scientific evidence as was required for food additive approval.[415] This uniform, high evidentiary bar reflected respect for premarket review. And although the petition program was technically not mandatory for marketing,[416] FDA carried significant authority over the market. It also conducted its own large study: between 1972 and 1982, an FDA-contracted committee created "detailed reports" on the safety of more than 400 GRAS substances.[417] And when FDA believed a substance was GRAS for certain uses, it sought notice and comment and, if encouraging, used rulemaking to affirm GRAS status.[418] Therefore, GRAS products were subject to significant premarket (and postmarket) oversight, and companies generally engaged with FDA before bringing new food substances to market.

FDA abandoned these efforts by 1997.[419] Faced with insufficient funding and a backlog of petitions for GRAS substances *and* for food additives, it abandoned its GRAS premarket petition regime, moving toward a voluntary notification process.[420] This change made the GRAS pathway vastly more lenient than the food additive pathway—an efficient but lax superhighway that could solve both backlogs at once. This sidelining of premarket review has led many to self-determine their products as GRAS without FDA awareness—a process that has been called "secret GRAS"—which is rife with conflicts of interest.[421] Through January 2011, approximately 1,000 substances are estimated to have entered the market as GRAS after secret deliberations by food companies,[422] though that number is larger today. Further, although GRAS status applies to a

414 Beyranevand, *supra* note 4, at 898–99. Not all substances ended up on the list, but the list was broad and consistently updated. *Id.* at 899.

415 *Id.* at 903.

416 *Id.* at 899.

417 *GRAS Substances (SCOGS) Database*, U.S. FOOD & DRUG ADMIN. (Mar. 3, 2022), https://www.fda.gov/food/generally-recognized-safe-gras/gras-substances-scogs-database; *History of the GRAS List and SCOGS Reviews*, U.S. FOOD & DRUG ADMIN. (Jan. 4, 2018), https://www.fda.gov/food/gras-substances-scogs-database/history-gras-list-and-scogs-reviews.

418 *History of the GRAS List and SCOGS Reviews*, *supra* note 417.

419 Peter Barton Hutt, *Historical Themes*, *supra* note 56, at 26; 62 Fed. Reg. 18941 (Apr. 17, 1997). The rule was finalized in 2016. 81 Fed. Reg. 54,960 (Aug. 17, 2016).

420 Hutt, *supra* note 56, at 26; Faustman et al., *supra* note 4, at 1261.

421 Faustman et al., *supra* note 4, at 1260 (citation omitted).

422 *Id.* at 2.

particular substance "under the conditions of its intended use,"[423] in practice, companies are free to devise new uses and creative combinations of additives.

We do not know the full scope of substances added to food in the United States, but very few food additives use the premarket review pathway.[424] The consequence is a flooding of unvetted food additives onto the market without oversight.[425] As concluded by the U.S. Government Accountability (GAO) office in 2010, "FDA's Oversight Process Does Not Help Ensure the Safety of All New GRAS Determinations."[426] The language "does not help" indicates the level of faith GAO had in FDA's GRAS regime.

There is evidence that many substances deemed GRAS are harmful. Trans fats notably killed about 7,000 people per year until FDA revoked the GRAS status of partially hydrogenated oils (the main source) in 2015.[427] By the time FDA took action, at least 75% of trans fats were already removed from the food supply due to public pressure and state and local lawmaking.[428] Likewise, because caffeine is generally treated as GRAS, caffeinated concoctions are not reviewed before marketing.[429] Between 2004 and 2014, energy drinks with caffeine caused 34 deaths, and the combination of caffeine with alcohol was deemed particularly dangerous.[430] Four Loko famously combined alcohol and caffeine in a fruity youth-marketed drink, and it caused "scores of deaths and hospitalization" in youth.[431] Caffeinated alcohol drinks can create a "wide-awake

423 FDCA § 201(s).

424 Kimberly Kindy, *Food Additives on the Rise as FDA Scrutiny Wanes*, WASH. POST (Aug. 17, 2014), https://www.washingtonpost.com/national/food-additives-on-the-rise-as-fda-scrutiny-wanes/2014/08/17/828e9bf8-1cb2-11e4-ab7b-696c295ddfd1_story.html.

425 It is true FDA has received more than 1000 voluntary GRAS notices. *See Gras Notices*, U.S. FOOD & DRUG ADMIN. (Apr. 3, 2023), https://www.cfsanappsexternal.fda.gov/scripts/fdcc/?set=GRASNotices. However, a voluntary regime is not premarket review. It allows an unknown number of unknown products to market, and the very products that are most dangerous will be more likely to bypass a voluntary process.

426 FDA SHOULD STRENGTHEN ITS OVERSIGHT OF FOOD INGREDIENTS DETERMINED TO BE GENERALLY RECOGNIZED AS SAFE (GRAS), U.S. GOV'T ACCOUNTABILITY OFF. 8 (Feb. 2010).

427 Walter Willett, *The Scientific Case for Banning Trans Fats*, SCI. AM. (Mar. 2014), https://www.scientificamerican.com/article/scientific-case-for-banning-trans-fats.

428 *Id.*

429 *See* Leah S. Rosenfeld et al., *Regulatory Status of Caffeine in the United States*, 72 NUTRITION REVS. 23, 26 (2014). Technically, the GRAS listing applies only to caffeine used in cola-type beverages at a maximum concentration of 0.02%. *Id.*; 21 C.F.R. § 182.1180. But in practice, FDA does not require caffeine-containing foods to be reviewed before marketing, as companies are permitted to self-determine GRAS status (without FDA awareness) and are incentivized to do so "in almost all cases." Faustman et al., *supra* note 4, at 1261; *see also* Rosenfeld, *supra* (describing a caffeine concentration of 0.02% as allowed but noting that the legal status of higher concentrations is indeterminate).

430 Faustman et al., *supra* note 4, at 1262.

431 Ricardo Lopez, *Legal Settlement Restricts Marketing of Four Loko Alcoholic Drinks*, L.A. TIMES (Mar. 25, 2014), https://www.latimes.com/business/la-fi-mo-four-loko-settlement-

drunk" that allows people to drink more before passing out and inhibits self-recognition of being drunk.[432] FDA notified the seven manufacturers in 2010 that caffeine is not GRAS when mixed with alcohol, which led them to pull the products from the market.[433] While FDA took postmarket action on caffeinated alcohol drinks, caffeinated energy drinks (and other caffeinated foods) continue to cause public health concerns sans premarket review.[434] FDA officials have admitted caffeine's proliferation in the food supply is of growing concern.[435]

The most dangerous GRAS substance of all is probably sugar, which has fueled epidemics of obesity, diabetes, and heart disease.[436] Recent research has found sugar can cause addiction—hardly a characteristic of a known safe chemical.[437] Salt, too, is considered GRAS by FDA, despite being responsible for more than 50,000 American deaths each year,[438] and the American Medical Association has urged FDA to revoke salt's GRAS status.[439] This is not to say salt and sugar should be banned. Rather, FDA could assess the safety of a particular quantity of salt and sugar; as noted, GRAS status is supposed to be connected to an "intended use."[440]

The food additive story is largely about resources. FDA's regulation of food has been almost entirely supported by appropriations, while drug regulation has been supported by user fees since 1992.[441] As Peter Barton Hutt has noted, non-user-fee-funded programs play second fiddle, as Congress must increase appropriations for user fees proportionately to what industry pays.[442] Without increases to FDA funding, user-fee-funded programs can indirectly drain

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20140325-story.html#axzz2x9Uqhhvp.

432 Jenna Johnson & Kevin Sieff, *Four Loko Ban Fuels Buying Binge*, WASH. POST (Nov. 18, 2010), https://www.washingtonpost.com/wp-dyn/content/article/2010/11/18/AR2010111806114.html.

433 *Alcohol and Caffeine*, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 14, 2022), https://www.cdc.gov/alcohol/fact-sheets/caffeine-and-alcohol.htm.

434 *See* Laila Al-Shaar, *Health Effects and Public Health Concerns of Energy Drink Consumption in the United States: A Mini-Review*, FRONTIERS IN PUB. HEALTH (2017), at 1, 1.

435 Antonia Mattia, *Regulatory Status of Caffeine*, FDA: CFSAN (Aug. 15-16, 2013), https://ods.od.nih.gov/pubs/energydrinks2013/Mattia.pdf.

436 *See* Beyranevand, *supra* note 4, at 916.

437 David A. Wiss, Nicole Avena & Pedro Rada, *Sugar Addiction: From Evolution to Revolution*, FRONTIERS IN PSYCHIATRY (Nov. 8, 2018), at 1, 10, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6234835/pdf/fpsyt-09-00545.pdf; *see generally* MICHAEL MOSS, SUGAR SALT FAT: HOW THE FOOD GIANTS HOOKED US (2013) (describing addictive power of sugar, salt, and fat).

438 Mozaffarian et al., *supra* note 18.

439 Melanie Warner, *The War Over Salt*, N.Y. TIMES (Sept. 13, 2006), https://www.nytimes.com/2006/09/13/business/the-war-over-salt.html.

440 FDCA § 201(s).

441 *See supra* Section II.B.1 (discussing user fees for drugs); Hutt, *supra* note 4, at 452–54.

442 Peter Barton Hutt, *Historical Themes*, *supra* note 56, at 26.

resources from food regulation.[443] Nor was FDA's food center's budget increased commensurate with its vast responsibilities, including food safety, nutrition, dietary supplements, cosmetics, and food additives. Between 1992 and 2007, the Center for Food Safety and Applied Nutrition lost 15% of its staff while accumulating multiple new statutory obligations.[444] A full two-thirds of the $1.1 billion food budget goes to inspections,[445] leaving $400 million for everything else. Further, were FDA to promulgate a splashy policy, including revoking GRAS status for sugar or salt at certain quantities, litigation would quickly ensue, thereby further draining regulatory resources.

Case law was mostly a bystander to these regulatory developments. In 2017, several public health organizations challenged FDA's GRAS regulatory regime as arbitrary and capricious and not in accordance with the FDCA.[446] They also alleged that FDA has essentially delegated the core duties of food additive regulation to private parties, despite Congress's intent in the Food Additives Amendment that FDA vet food additives.[447] However, they were rebuffed by the United States District Court for the Southern District of New York, which, in a strikingly formalistic opinion, remarked that GRAS substances are exempted from premarket review.[448] Therefore, FDA has no premarket responsibility to delegate or violate.[449] The court missed the point that companies are self-certifying food additives as GRAS to dodge the premarket process, which FDA has nullified. On formalistic grounds, the court left the GRAS regime in place.

It is hard to think of a system more favorable to industry than self-affirmed GRAS, at least in the short-term. Companies have the flexibility to experiment with new food additives and self-certify them as GRAS, thus allowing a tremendous amount of flexibility in food design. Flexibility in food production has arguably allowed for the design of more addicting food products.[450] Further, companies are likely to be more concerned with short-term harms rather than long-term concerns such as cancer or cardiovascular disease, which are harder to trace back to a product and less likely to cause uproar. Under today's GRAS regime, companies may freely decide how many resources to devote to vetting

443 Hutt, *supra* note 4.

444 *Id.* at 459.

445 Helena Bottemiller Evich, *The FDA's Food Failure*, POLITICO (Apr. 8, 2022), https://www.politico.com/interactives/2022/fda-fails-regulate-food-health-safety-hazards.

446 Ctr. for Food Safety v. Becerra at 12, No. 1:17-cv-03833-VSB (S.D.N.Y. Sept. 30, 2021), ECF No. 100.

447 *Id.* at 13.

448 *Id.* at 15.

449 *Id.* at 15.

450 *See* Michael Moss, *The Extraordinary Science of Addictive Junk Food*, N.Y. TIMES MAG. (Feb. 20, 2013), https://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html ("In the process of product optimization, food engineers alter a litany of variables with the sole intent of finding the most perfect version (or versions) of a product.").

additives and avoiding safety scandals. Such a regime should give us pause, given many products have brought industry enormous wealth despite safety concerns and public rebuke, such as e-cigarettes, opioids, sugary foods, and many drugs and devices.

The proposed Ensuring Safe and Toxic-Free Foods Act of 2022[451] would create some measurable changes to improve premarket review, including setting a final date after which no food additive brought to market may be considered GRAS.[452] However, it does not provide the resources to revitalize a starved program, and it appears to focus on food chemicals rather than long-used harmful substances like sugar and salt. Today, food additive premarket review is little more than a dead letter, arguably due to long-term underfunding of this core FDA function.

E. Medical Devices

A growing chorus of voices has critiqued FDA's premarket review of medical devices.[453] As Matthew Herder and Nathan Cortez have noted, "the vast majority of medical devices escape formal scrutiny of safety and efficacy."[454] Examples of serious harm and lack of effectiveness abound. A 2018 investigation by the International Consortium of Investigative Journalists (ICIJ) found that between 2008 and 2017, more than 5.4 million device adverse event reports were sent to FDA.[455] The ICIJ investigation also found 83,000 deaths and 1.7 million injuries in this time frame were linked to medical device malfunctions in the U.S.[456]

One day after the ICIJ issued its report, FDA announced a plan to repair the

451 Ensuring Safe and Toxic-Free Foods Act of 2022, S. 4316, 117th Cong. (2021–2022).

452 *Id.* § 2(b)(2)(E).

453 *E.g.*, Darrow et al., *supra* note 4; Martinez, *supra* note 4; Rome et al., *supra* note 4; Kushal T. Kadakia et al., *Renewing the Call for Reforms to Medical Device Safety—The Case of Penumbra*, 182 JAMA INTERNAL MED. 59, 61 (2022); NAT'L ACADS. OF SCIS., MEDICAL DEVICES AND THE PUBLIC'S HEALTH: THE FDA 510(K) CLEARANCE PROCESS AT 35 YEARS (2011); JEANNE LENZER, DANGER WITHIN US: AMERICA'S UNTESTED, UNREGULATED MEDICAL DEVICE INDUSTRY AND ONE MAN'S BATTLE TO SURVIVE IT (2017); Jonathan R. Dubin et al., *Risk of Recall Among Medical Devices Undergoing US Food and Drug Administration 510(k) Clearance and Premarket Approval, 2008-2017*, JAMA NETWORK OPEN (May 6, 2021); Ari J. Gartenberg, Sanket S. Shruva & Rita F. Redberg, *Presumed Safe No More: Lessons from the Wingspan Saga on Regulation of Devices*, BMJ (Jan. 22, 2014); Matthew Herder & Nathan Cortez, *A "DESI" for Devices?*, *in* THE FUTURE OF MEDICAL DEVICE REGULATION (I. Glenn Cohen et al., eds., 2022); Sanket S. Dhruva et al., *Ensuring Patient Safety and Benefit in Use of Medical Devices Granted Expedited Approval*, *in id.*

454 Herder & Cortez, *supra* note 453, at 132.

455 INT'L CONSORTIUM OF INVESTIGATIVE JOURNALISTS, *supra* note 19.

456 *Id.*

medical device review system.[457] Therefore, it is clear even to FDA that something is amiss—or perhaps the political pressure is so strong that FDA must act. In its plan, FDA stressed the value of a "market-based approach" involving providing information to the public about the basis for some device approvals.[458] Many reforms have been discussed, but few of the fundamentals have changed in response to wide critiques of FDA's device program. Ultimately, according to former FDA Commissioner David Kessler, "The problem we have is that, when it comes to medical devices, we built a system that doesn't work."[459]

1. Statutory Defects: The 510(k) Process and Beyond

FDA first obtained jurisdiction over medical devices in 1938, but without the power to conduct premarket review.[460] The years after World War II saw numerous "quack" devices using "colored lights, dangerous gases such as ozone and chlorine, radio waves, heat, and vibration with claims of treatment and cure for virtually every disease known to man."[461] Other devices, including the Dalkon shield contraceptive, cardiac pacemakers, and implantable intraocular lenses, caused severe safety issues warranting greater oversight.[462]

The Medical Device Amendments of 1976[463] allowed FDA to conduct premarket review of medical devices. The framework provided for device classifications under Classes I through III representing escalating levels of risk.[464] Although FDA initially sought to retain many product types in Class III, generally subject to the Premarket Approval ("PMA") pathway, it was subject to

457 Matthew Perrone, *FDA Pledges to Modernize How It Approves Medical Devices*, PBS (Nov. 26, 2018, 3:03 P.M.), https://www.pbs.org/newshour/health/fda-pledges-to-modernize-how-it-approves-medical-devices.

458 *Statement from FDA Commissioner Scott Gottlieb, M.D. and Jeff Shuren, M.D.*, U.S. FOOD & DRUG ADMIN. (Nov. 26, 2018), http://web.archive.org/web/20211204100932/www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-and-jeff-shuren-md-director-center-devices-and.

459 THE BLEEDING EDGE (Netflix 2018).

460 *See* HUTT ET AL., *supra* note 37, at 1205.

461 *Id.* at 1195.

462 *Id.* at 1202.

463 The Medical Device Regulation Act, Pub. L. No. 94-295, 90 Stat. 539 (1976).

464 HUTT ET AL., *supra* note 37, at 1204. The classification depends on the use of the product and its risk level. *Classify Your Medical Device*, U.S. FOOD & DRUG ADMIN. (Feb. 7, 2020), https://www.fda.gov/medical-devices/overview-device-regulation/classify-your-medical-device. Class I devices include a toothbrush, 21 C.F.R. §§ 872.6855, 872.6865; an elastic bandage, *id.* § 880.5075; and an electrode to measure the pH of the esophagus or stomach, *id.* § 876.1400. Class II devices include a pediatric medical crib, *id.* § 880.5140, an endoscope for visualizing gastrointestinal or urinary tracts, *id.* § 876.1500, and an ultrasound device, *id.* § 892.1540–70. Class III devices include a brain stimulator implant, *id.* § 882.5820, a testicular prosthesis (a round device meant to resemble a testicle), *id.* § 876.3750, and bovine bone tissue grafted into the human spine, *id.* § 888.3015.

resource constraints and corporate and congressional pressure.[465] Enter the 510(k), or Substantial Equivalence, pathway for devices. It was originally designed to identify devices that were substantially equivalent to products on the market as of 1976 (i.e., predicates), and thus to identify exceptions to a baseline requirement of premarket review.[466] Products without a predicate were presumptively placed into Class III.[467] To enter the market, such a device would either need premarket approval or down-classification to Class I or Class II.[468]

However, 510(k) became the exception that swallowed the rule, with even high-risk devices often allowed to use the pathway and enter the market without evidence of safety and effectiveness. Over 2008–2017, FDA cleared 28,246 510(k) submissions but approved only 310 PMA applications.[469] By all standards, the 510(k) process is incredibly lenient; therefore, as long as a predicate is available, clearance is the norm. Between 1976 and 2009, FDA made non-substantially-equivalent determinations for just 1–4% of 510(k) notifications.[470] Industry greatly favors the 510(k) process and has developed sophisticated ways of avoiding PMA. According to one industry consultant, companies introducing a new device will search a database of predicates to find the most similar product for a 510(k) submission.[471] Only something truly novel would be barred from 510(k), and newly cleared devices then contribute to a growing pool of predicates, facilitating avoidance of the PMA process. And even for a truly novel product, the "de novo" review process allows FDA to reject a 510(k) submission but down-classify the product to Class I or Class II (from the automatic Class III designation).[472] With these compelling alternatives, it is no wonder so few devices undergo premarket review.

Numerous safety issues have emerged from 510(k)-cleared devices. A full 13% of them are recalled.[473] Metal-on-metal total hip replacement devices, for example—which FDA cleared under the 510(k) process based on "equivalence" to prior devices[474]—had been tested as early as the 1960s but were generally abandoned after patients suffered leaching of metal particles into their blood and

465 HUTT ET AL., *supra* note 37, at 1216, 1241.

466 NAT'L ACADS. OF SCIS., *supra* note 453, at 32–33.

467 HUTT ET AL., *supra* note 37, at 1204.

468 *Id.*

469 Dubin et al., *supra* note 453, at 4.

470 NAT'L ACADS. OF SCIS., *supra* note 453, at 33.

471 *Demystifying the De Novo Process*, GLOB. MED. DEVICE PODCAST (May 12, 2022), https://www.greenlight.guru/blog/demystifying-the-de-novo-process.

472 *De Novo Classification Request*, U.S. FOOD & DRUG ADMIN. (Jan. 7, 2022), https://www.fda.gov/medical-devices/premarket-submissions-selecting-and-preparing-correct-submission/de-novo-classification-request.

473 Kadakia, *supra* note 453, at 61.

474 Ardaugh, Graves & Redberg, *supra* note 3, at 97–99.

organs.[475] FDA began allowing them in 1998.[476] Eventually clearing more than 175 submissions,[477] FDA was known to use "split predicates," in which it would compare hip devices' characteristics with prior devices' characteristics without comparing the devices as a whole.[478] Metal-on-metal devices became increasingly used in the 2000s; by the end of the decade, they were used in a full third of U.S. hip replacements[479] and were inserted into more than 500,000 Americans. As one doctor noted, he started implanting them "because they had passed FDA muster."[480]Yet the devices were found to leach dangerous level of cobalt and chromium ions into the blood, release painful and destructive debris around the joint, and have high failure rates requiring replacement.[481] Some patients suffered cognitive symptoms, sometimes mimicking dementia, from metal ions impairing their brains.[482] In 2016, FDA issued an order requiring PMA for metal-on-metal total hip replacements,[483] which ended their sale.

Similarly, the Penumbra JET7 catheter for extraction of clots from the brain, cleared on thin evidence through the 510(k) process, was found to fracture inside patients' cerebral blood vessels.[484] The JET7 was part of a daisy chain of a dozen iterations of Penumbra catheters, only one of which had clinical evidence.[485] In addition, the predicate for the original product was authorized on low-quality data.[486] In 2021, FDA announced an urgent recall.[487] The transvaginal mesh is another 510(k)-related saga. The meshes have been implanted in the vaginal wall to treat pelvic organ prolapse. As of 2017, FDA cleared sixty-one vaginal mesh devices that relied on equivalence to the ProteGen Sling from 1996, a recalled device.[488] Transvaginal mesh for pelvic organ prolapse "has not ever generally

475 Barry Meier, *In Medicine, New Isn't Always Improved*, N.Y. TIMES (June 25, 2011), https://www.nytimes.com/2011/06/26/health/26innovate.html?ref=business.

476 Deborah Cohen, *How Safe Are Metal-On-Metal Hip Implants?*, BMJ (Feb. 28, 2012), at 1, 4.

477 Heneghan et al., *supra* note 1, at 2.

478 Ardaugh, Graves & Redberg, *supra* note 3, at 98.

479 Barry Meier, *Concerns Over 'Metal on Metal' Hip Implants*, N.Y. TIMES (Mar. 3, 2010), https://www.nytimes.com/2010/03/04/health/04metalhip.html.

480 Meier, *supra* note 475.

481 Heneghan et al., *supra* note 1, at 1; Linda Roth, *Metal-on-Metal Hip Implant Risks*, ARTHRITIS FOUNDATION, https://www.arthritis.org/health-wellness/treatment/joint-surgery/safety-and-risks/metal-on-metal-hip-implant-risks; Ardaugh, Graves & Redberg, *supra* note 3, at 98; Cohen, *supra* note 476, at 1–3.

482 THE BLEEDING EDGE (Netflix 2018).

483 81 Fed. Reg. 8146 (Feb. 18, 2016).

484 Kadakia et al., *supra* note 453, at 60.

485 *Id.*

486 *Id.*

487 *Id.*

488 Carl J. Haneghan et al., *Trials of Transvaginal Mesh Devices for Pelvic Organ Prolapse: A Systematic Database Review of the US FDA Approval Process*, BMJ OPEN (2017), at 1, 2–3.

been subjected to adequate clinical studies at any phase of its development."[489] These meshes have caused pain, bleeding, and infections, as the mesh can perforate and protrude through the vaginal wall.[490] A devastating 2016 Cochrane review found "limited utility" of the mesh given association with a number of worse outcomes compared with simple tissue repair.[491] Although some manufacturers voluntarily left the market, in 2019, FDA ordered the remaining companies to stop all sale and distribution of mesh for pelvic organ prolapse in the United States.[492] More than 100,000 women have sued mesh manufacturers for their injuries, leading to protracted litigation.[493]

Neither the JET7 nor transvaginal meshes should have been allowed on the market without clinical evidence—the foundation of premarket review. The 510(k) pathway has been considered so problematic that, in 2011, the Institute of Medicine (now the National Academy of Medicine) issued a report stating that 510(k) cannot be considered premarket review because it is predicated on equivalence, not safety and effectiveness, and recommending that the entire program be replaced[494]—a shocking recommendation. Yet FDA has doubled down. Since the 2011 report, the agency has embraced 510(k) "lite," stating it is willing to use postmarket controls coupled with less evidence in 510(k) submissions.[495] It also will tolerate more uncertainty when it deems a technology innovative.[496] And there has been a shift toward third-party 510(k) review, in which private corporations, rather than FDA, review 510(k) submissions.[497] These shifts likely reflect an under-resourced FDA that believes speedier access to devices is warranted and has increasingly accepted corporations policing themselves.

The 510(k) process amounts to a statutory loophole around premarket review but is not the only cause of statutory erosion of device review. In 1997, congressional Republicans passed the Food and Drug Administration

489 *Id.* at 7.

490 Sheila Kaplan & Matthew Goldstein, *F.D.A. Halts U.S. Sales of Pelvic Mesh, Citing Safety Concerns for Women*, N.Y. TIMES (Apr. 16, 2019), https://www.nytimes.com/2019/04/16/health/vaginal-pelvic-mesh-fda.html.

491 Christopher Maher et al., *Transvaginal Mesh or Grafts Compared with Native Tissue Repair for Vaginal Prolapse*, 9 COCHRANE DATABASE OF SYSTEMATIC REVS., at 25 (2016).

492 Kaplan & Goldstein, *supra* note 490.

493 INT'L CONSORTIUM OF INVESTIGATIVE JOURNALISTS, *supra* note 19.

494 NAT'L ACADS. OF SCIS., *supra* note 453, at 5–8.

495 U.S. FOOD & DRUG ADMIN., BENEFIT-RISK FACTORS TO CONSIDER WHEN DETERMINING SUBSTANTIAL EQUIVALENCE IN PREMARKET NOTIFICATIONS (510(K)) WITH DIFFERENT TECHNOLOGICAL CHARACTERISTICS 18 (2018).

496 *Id.* at 16.

497 *510(k) Third Party Review Program*, U.S. FOOD & DRUG ADMIN. (Aug. 18, 2020), https://www.fda.gov/medical-devices/premarket-submissions-selecting-and-preparing-correct-submission/510k-third-party-review-program.

Modernization Act,[498] which stated FDA "shall consider, in consultation with the applicant, the least burdensome appropriate means of evaluating device effectiveness that would have a reasonable likelihood of resulting in approval."[499] In other words, Congress instructed FDA to tailor the methods to minimize burden and *increase* the odds of approval, rather than aim for accurate determinations of safety and effectiveness.

The 21st Century Cures Act of 2016[500] weakened device regulation even further; it has an entire subtitle called "Medical Device Innovations."[501] It requires FDA to include in device decisions "a brief statement regarding how the least burdensome requirements were considered and applied."[502] If the submission lacks sufficient information, FDA may only request information "necessary" to the determination, and must consider the "least burdensome means" for the applicant to demonstrate substantial equivalence when requesting such information.[503] The statute also (1) created the breakthrough device pathway;[504] (2) requires FDA to review Class I and II devices to determine if they are exempt from 510(k) (an exemption from an exemption);[505] (3) requires FDA to ensure its device employees have training on least burdensome device review;[506] and (4) expanded the use of real-world evidence,[507] which, as discussed, is a work-around for clinical trials.[508]

2. Ideological Capture

FDA has appeared to embrace this "pro-innovation" bent advanced by Congress and corporate lobbying. Investigative journalists in 2015 revealed that Jeffrey Shuren, head of FDA's device center, held secret meetings with a device trade association in advance of the 21st Century Cures Act, and FDA and the association jointly wrote legislative text.[509] Indeed, FDA actually helped craft the

498 HUTT ET AL., *supra* note 37; Pub. L. No. 105-115, 111 Stat. 2295 (1997).

499 FDCA § 513(a)(3)(D)(ii).

500 21st Century Cares Act, Pub. L. No. 114-255, 130 Stat. 1033 (2016). Industry heavily lobbied this law. *See supra* note 315.

501 *See* 21st Century Cures Act, Subtitle F.

502 FDCA § 517A(a)(3).

503 FDCA § 513(i)(1)(D)(i). A parallel provision exists for PMA submissions. *See* FDCA § 515(c)(5)(A). The least burdensome provisions originated in the FDA Modernization Act, but the 21st Century Cures Act expanded them. U.S. FOOD & DRUG ADMIN., THE LEAST BURDENSOME PROVISIONS: CONCEPT AND PRINCIPLES 5 (Feb. 5, 2019), https://www.fda.gov/media/73188/download.

504 21st Century Cures Act § 3051.

505 *Id.* § 3054.

506 *Id.* § 3058.

507 *Id.* § 3022.

508 *See supra* Section II.B.5.

509 LENZER, *supra* note 453, at 144.

least burdensome provisions in consultation with industry.[510] Meanwhile, Dr. Shuren has acted punitively toward employees concerned about the devices FDA is allowing to market. He famously attempted to prosecute "the FDA Nine," a group of FDA scientists writing letters to Congress and President Obama about extremely concerning devices about which scientists were overruled by agency leadership.[511] According to a former official who headed device review for four years, after 2012, following congressional and industry pressure, the device center assumed a new attitude: "We need to find ways to get products on the market quicker, faster and we need to figure out how to reduce the premarket data requirements."[512]

The medical device industry spent $20 million each year from 2014-2018 lobbying the federal government.[513] Between 2010 and 2017, warning letters to device manufacturers dropped 80%, while new device approvals climbed three-fold.[514] FDA in 2018 announced a new process for applicants to assert the agency has violated the least burdensome provisions,[515] thus hampering its own ability to request evidence.[516] This change occurred during the Trump Administration, one year after the GAO, perhaps under presidential influence, issued a report finding that FDA needed to expend more resources ensuring it complied with the least burdensome requirements.[517] In its 2019 least burdensome guidance, FDA is clear about its stance on premarket review: "FDA intends to, and industry should, consider the use of postmarket data collection to reduce premarket data collection whenever appropriate and feasible."[518] It is surprising that FDA would seek to reduce premarket data for the devices it regulates—indeed, that is the information on which it must base its decisions.

What is more, when the Institute of Medicine prepared its 2011 report on

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510 Perrone, *supra* note 457.

511 LENZER, *supra* note 453, at 141–42.

512 Matthew Perrone, *At FDA, a New Goal, Then a Push for Speedy Device Reviews*, AP NEWS (Nov. 27, 2018), https://apnews.com/article/health-north-america-us-news-ap-top-news-implant-files-9f8ea03a4d324d1ba5585680d280804b.

513 Adiel Kaplan et al., *Medical Device Makers Spend Millions Lobbying to Loosen Regulations in D.C.*, NBC NEWS (Dec. 3, 2018), https://www.nbcnews.com/health/health-care/medical-device-makers-spend-millions-lobbying-loosen-regs-d-c-n940351.

514 *Id.*

515 *The Least Burdensome Provisions: Concept and Principles*, U.S. FOOD & DRUG ADMIN. (Mar. 14, 2019), at 21–23, https://www.fda.gov/media/121002/download; Nick Tippmann, *When to Throw the Least Burdensome Flag on FDA*, GLOB. MED. DEVICE PODCAST (Oct. 6, 2021), https://www.greenlight.guru/blog/when-to-throw-the-least-burdensome-flag-on-fda.

516 It is possible FDA created this process to deflect other methods of contesting FDA's compliance with the least burdensome provisions.

517 U.S. GOV'T ACCOUNTABILITY OFF., FDA DEVICE MEDICAL REVIEWS: EVALUATION IS NEEDED TO ASSURE REQUESTS FOR ADDITIONAL INFORMATION FOLLOW A LEAST BURDENSOME APPROACH 28–29 (Dec. 2017), https://www.gao.gov/assets/gao-18-140.pdf.

518 U.S. FOOD & DRUG ADMIN., *supra* note 503, at 8.

medical devices, FDA informed it that the goals of the 510(k) program are to "make available to consumers devices that are safe and effective" and to "promote innovation in the medical device industry."[519] That the function of this review process would be "availability" and "innovation" highlights FDA's internalization of the goal of being a device approver rather than a consumer protection agency, at least with respect to device review.

3. Other Device Problems

It should be no surprise that device review pathways other than 510(k) have assumed a neoliberal character. The supplemental PMA pathway, for instance, created by FDA regulations in 1986,[520] allows manufacturers to modify a PMA-approved medical device in ways that affect the device's safety or effectiveness, or for other significant changes.[521] PMAs undergo a median 50 supplements over 15 years, and supplements are not limited to low-risk devices; in fact, most electronic heart implants are approved via PMA supplement.[522] FDA usually does not require new clinical data.[523] Supplements are generally piecemeal changes, but as they accumulate can make it difficult to evaluate the larger changes occurring to a product over time, rendering the practice of medicine more difficult since the new device is different from the original product that had clinical data.[524]

Consider heart implants. For these devices, between 1979 and 2012, FDA approved 77 PMA applications but 5829 supplemental applications.[525] FDA approved the Sprint Fidelis defibrillator lead in 2004 as a supplement—without clinical trials—based on a PMA approved in 1993 that was supplemented at least 91 times.[526] The Sprint Fidelis was recalled in 2007 after it failed more than 600 times.[527] The device is prone to fracture, estimated to occur in 2.3% of patients,

519 NAT'L ACADS. OF SCIS., *supra* note 453, at xii.

520 Rome et al., *supra* note 4, at 385. However, it was codified by Congress in the Food and Drug Modernization Act.

521 *PMA Supplements and Amendments*, U.S. FOOD & DRUG ADMIN. (Dec 12, 2019), https://www.fda.gov/medical-devices/premarket-approval-pma/pma-supplements-and-amendments.

522 Rome et al., *supra* note 4, at 387, 390.

523 Benjamin N. Rome, Daniel B. Kramer & Aaron S. Kesselheim, *Approval of High-Risk Medical Devices in the US: Implications for Clinical Cardiology*, 16 CURRENT CARDIOLOGY REPS., at 1, 2, 4 (2014); *PMA Supplements and Amendments*, *supra* note 521; Sarah Y. Zheng & Rita F. Redberg, *Premarket Approval Supplement Pathway: Do We Know What We Are Getting?*, 160 ANNALS INTERNAL MED. 798, 798 (2014).

524 Zheng & Redberg, *supra* note 523; Oluwatobi R. Olaiya et al., *Postmarket Modifications of High-Risk Plastic Surgery Devices*, 8 PLASTIC RECONSTRUCTIVE SURGERY GLOB. OPEN (2020), at 1, 1.

525 Rome et al., *supra* note 4, at 387.

526 *Id.* at 387–88; Zheng & Redberg, *supra* note 523.

527 Zheng & Redberg, *supra* note 523.

yet it is difficult to remove.[528] Caring for these patients remains a challenge.[529] Similarly, the Riata family of defibrillator leads, approved through PMA supplements between 2002 and 2006, was recalled after the failure rate was discovered to be 32%.[530]

Even for the PMA process, FDA does not necessarily require high-quality evidence.[531] Essure, a Class III permanent sterilization device, was implanted into about 750,000 U.S. women.[532] It consisted of two thin coiled wires inserted into the fallopian tubes via the cervix and uterus.[533] The device causes inflammation and scarring of the tubes, thereby blocking egg migration.[534] FDA approved Essure in 2002 under expedited review based on a claimed success rate of 99.8% (after one year).[535] But the company did not rigorously measure outcomes after one year (despite the device being intended to be permanent), and there was no control group.[536] After approval, the number of complaints steadily grew as women suffered tubal perforation, severe pain, bleeds, unintended pregnancies, and even deaths.[537] Women implanted with Essure were ten times as likely to undergo reoperation as women who underwent other sterilization procedures.[538] Bayer pulled Essure from the market in 2018.[539] Essure is emblematic of the low evidence bar FDA has sometimes accepted for new medical devices undergoing premarket review.

The humanitarian device exemption is another pathway illustrating FDA's push for new products with less evidence. To use the pathway, the "probable benefit to health" must outweigh the "risk of injury or illness," and the device must be intended for a condition affecting not more than 8,000 Americans.[540]

528 Barnaby J. Feder, *Patients Warned as Maker Halts Sale of Heart Implant Part*, N.Y. TIMES (Oct. 15, 2007), https://www.nytimes.com/2007/10/15/business/15device.html.

529 Zheng & Redberg, *supra* note 523.

530 *Id.*

531 Sankey S. Dhruva, Joseph S. Ross & Aileen M. Gariepy, *Revisiting Essure — Toward Safe and Effective Sterilization*, 373 NEW ENG. J. MED. e17(1), e17(3) (2015).

532 Darrow et al., *supra* note 4, at 428–29.

533 LENZER, *supra* note 453, at 110–11.

534 *Id.*

535 THE BLEEDING EDGE (Netflix 2018); LENZER, *supra* note 453, at 110–11.

536 Jennifer Block, *The Battle over Essure*, WASH. POST (July 26, 2017), https://www.washingtonpost.com/sf/style/2017/07/26/essure. FDA says it accepted the lack of a control group because outcome data for tubal ligations—a very different procedure—was available. *Id.*

537 Dhruva, Ross & Gariepy, *supra* note 531, at e17(1).

538 LENZER, *supra* note 453, at 111.

539 Laurie McGinley, *Sales of Essure Birth Control Implant to Be Halted by Bayer; U.S. last to Sell Controversial Device*, WASH. POST (July 20, 2018, 4:35 P.M.), https://www.washingtonpost.com/news/to-your-health/wp/2018/07/20/sales-of-essure-birth-control-implant-halted-by-bayer-u-s-was-last-to-sell-controversial-device.

540 FDCA § 520(m).

Off-label use occurs and is not tracked.[541] For example, FDA approved the Wingspan brain stent system under this exemption based on a study of 45 patients with no active control group.[542] Because this data did not show efficacy or safety, the National Institutes of Health funded its own trial using government dollars.[543] NIH terminated the trial early because 15% of the Wingspan group had a death or stroke, compared with 6% of the medical therapy group.[544] Rather than pull the product, FDA narrowed the indications.[545]

4. The Fall of Device Review

Over time, without stronger checks, the device pathways will likely grow more lenient because of statutory erosion and the Center's leadership. For devices, then, the priority is not safety and effectiveness, but faster access ("innovation"). As Dr. Jeffrey Shuren, the head of FDA's device program, has explained, the benefits of "innovative" devices coming to market is worth the risks.[546]

F. Conclusion: Premarket Review, Corporate Power, and Neoliberalism

FDA was born in an era of broad public awakening about corporations selling fraudulent and unsafe foods and drugs.[547] Crisis after crisis in public health led Congress to steadily entrust FDA with increasing power over products intimately connected with human welfare. FDA received its latest significant premarket authority, over tobacco products, as recently as 2009. However, I, and many others, have documented a serious loss of life in the United States associated with dysfunction in FDA's premarket review systems.[548] Premarket review is a prized symbol of independent scientific inquiry. Review decisions, most agree, belong to FDA[549]—not to HHS, Congress, courts, or the President. This is, in part, why review decisions usually are not reviewed by the Office of

541 Gartenberg et al., *supra* note 453, at 2.

542 *Id.* at 1.

543 *Id.* at 2.

544 *Id.*

545 *Id.*

546 *Editorial*: *80,000 Deaths. 2 Million Injuries. It's Time for a Reckoning on Medical Devices.*, N.Y. TIMES (May 4, 2019), https://www.nytimes.com/2019/05/04/opinion/sunday/medical-devices.html.

547 *See* Kapczynski, *supra* note 26, at 183.

548 *See supra* Table 1.

549 *See, e.g.*, *Muchmore*, *supra* note 10, at 540–41 ("The FDA's highest profile activity is its marketing authorization role. In many industries—such as drugs, medical devices, and biological products—the FDA is the primary agency charged with determining which of those products may be sold in the United States." (footnotes omitted)).

Management and Budget or the White House,[550] even if they might significantly affect the economy or public health. Yet my analysis suggests the day-to-day operation of premarket review has been under assault by corporate power.

Corporate power operated through multiple institutional mechanisms to erode premarket review in five regulatory areas.[551] For laboratory-developed tests (LDTs), corporations lobbied to maintain an "enforcement discretion" policy involving no premarket review at all. Although FDA began to make headway during the Obama Administration, the slow pace (amid corporate lobbying and litigation threats) led to little substantive progress before the election of President Trump, who was protective of the industry. During FDA's pandemic push to stop fraudulent COVID-19 LDTs, Trump's HHS used executive power to make premarket review optional, which compromised its public health benefits but retained the financial benefits for industry.

For drugs, Congress has eroded the evidentiary requirements for new drugs both directly (e.g., allowing a single clinical trial in some instances) and through a suite of special pathways, such as accelerated approval. Meanwhile, it has reshaped the funding structure of FDA's drug center to rely largely on industry money. These "user fees" grant industry tremendous negotiating power over FDA prerogatives and review timelines. With industry-focused commissioners, FDA has seemingly embraced its "innovation" role and partially forgotten its consumer protection moorings, leading to surprising approvals like aducanumab, Makena, and OxyContin. Caselaw was largely a bystander, but it helped tear open the hole of off-label promotion, actively threatens access to mifepristone, and helped lay the groundwork for weakening federal administrative agencies generally.

As to tobacco, in compromise legislation with the tobacco industry, Congress managed to exempt both old and new tobacco products from premarket review. Therefore, premarket review of tobacco products was largely a nullity until 2016, when FDA gained jurisdiction over new types of tobacco products like e-cigarettes. However, under Trump, the industry-friendly Dr. Scott Gottlieb deferred premarket review of e-cigarettes in the name of innovation. When litigation forced FDA to initiate premarket review of e-cigarettes, FDA began scientific review but minimally enforced premarket review as a matter of law. Largely, this decision stemmed from DOJ, which interfered with FDA's enforcement wishes due to the threat of industry litigation. Despite DOJ's strategy for FDA to make scientific decisions and minimally enforce the law, industry still sued over tobacco scientific assessments, which has further stalled

550 *See* Exec. Order 12866, 58 Fed. Reg. 51735 (1993) (requiring review by the Office of Management and Budget for "significant" regulatory actions and defining "regulatory action" as substantive action expected to lead to a final rule—i.e., not premarket review decisions).

551 See *supra* Sections II.A–E for a full exposition and citations.

enforcement. Although the law clearly requires new tobacco products to undergo premarket review, FDA non-enforcement has built serious distance between the statute and its reality. The most popular e-cigarette products among youth remain unreviewed: while 85% of youth e-cigarette users use flavored e-cigarettes, FDA has not authorized a single flavored e-cigarette product (other than tobacco flavor).

Food additives deregulation reflects the financial starvation of a core FDA responsibility. FDA has allowed industry to ignore the premarket pathway and self-certify their food additives through the loophole of "generally recognized as safe." The neglect of FDA's food responsibilities also reflects a prioritization of biomedical "innovation"—by infusion of industry funds into the drug and device centers—over public health and social responsibilities.

Last, the device regime reflects the statutory loophole of 510(k) as a superhighway that manufacturers can use to avoid formal scrutiny of their devices. Ideological capture has led FDA leadership to co-draft legislation that weakened device review, including with "least burdensome" requirements (which FDA strengthened under the Trump Administration) that limit the evidence before FDA in making a device approval decision. As with drugs, FDA has at times embraced new, "exciting" devices with serious holes in their evidentiary basis.

Distilling the arcs of these five regulatory regimes, one can see the forces impacting FDA premarket review (Figure 1, reproduction). Not all these forces were impactful in every example, but together, they have increasingly undermined premarket review over the last four decades. And they share one common feature: as I argue, these efforts have reproduced neoliberal outcomes across all Centers—a striking erosion of the quintessential consumer protection agency. This transformation of FDA is not complete, but it remains ongoing and frequently frustrates public health and legal experts cited throughout this Article.

Some might argue that the forces identified in this Article target the law and policy milieu of premarket review, rather than scientific decisions themselves.[552] However, individual decisions and the law and policy scaffolding of premarket review are intertwined as a current political reality. For example, that FDA must avoid burdening device manufacturers through requests for more data[553] means that each scientific decision will be grounded in less data. The compromise of FDA's core scientific purpose, whether by influence over individual decisions or the larger policy milieu, raises serious concerns.

552 *Cf.* Holly Fernandez Lynch, Steven Joffe & Matthew S. McCoy, *The Limits of Acceptable Political Influence over the FDA*, 27 NATURE MED. 188, 190 (2021).

553 *See supra* Section II.E.2.

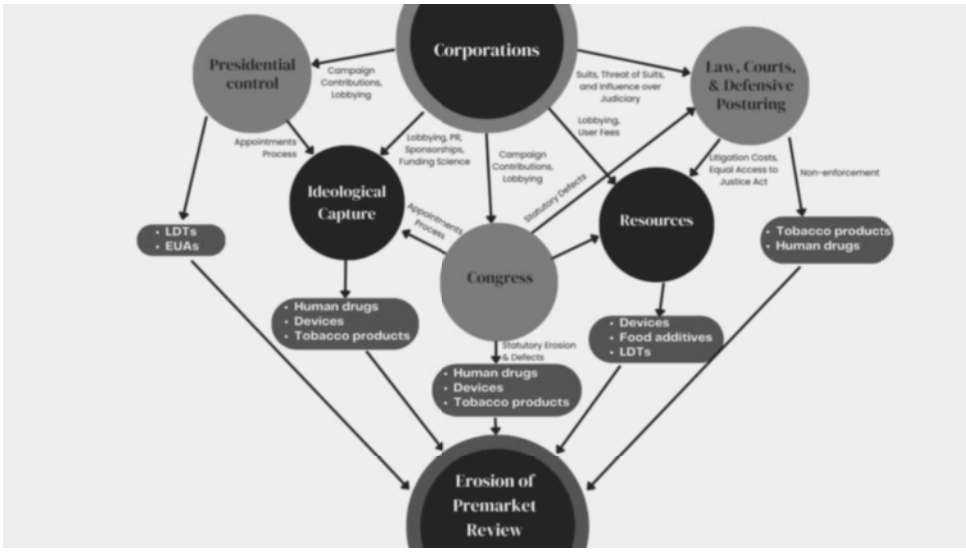

Figure 1 (again): Corporate contributions to the erosion of premarket review.

The decades-long story of premarket review is peppered with courageous employees who risked their careers to challenge the fall of FDA review. Included among them are the FDA Nine, who risked prosecution to draw public attention to problems with device reviews.[554] Unfortunately, FDA appears to have been on the opposing team from this sort of employee who treasures consumer protection. And that is largely because the most effective way to disarm premarket review has been the appointment of pro-business Commissioners laden with conflicts of interest and ideological biases. In 1988, the Commissioner position transitioned from an apolitical career role into one subject to presidential nomination and Senate confirmation,[555] which arguably worsened corporate influence over FDA.

Consider the latest commissioners. Dr. Margaret Hamburg was on the board of a large medical supplies distributor before starting at FDA, was one of the wealthiest Obama appointees, and, together with her husband, held hundreds of thousands of dollars in stock in FDA-regulated companies.[556] She attempted to loosen conflict-of-interest rules for advisory panels, "push[ed] through rules allowing faster drug approvals,"[557] and oversaw FDA during its attempted

554 LENZER, *supra* note 453, at 141–42.

555 Eli Y. Adashi, Rohit S. Rajan & I. Glenn Cohen, *When Science and Politics Collide: Enhancing the FDA*, 364 SCIENCE 628, 629 (2019).

556 Alicia Mundy, *New FDA Chief Must Divest Several Stock, Fund Holdings*, WALL ST. J. (May 26, 2009), https://www.wsj.com/articles/SB124328188115551961.

557 LENZER, *supra* note 321, at 135–36; Toni Clarke, *U.S. FDA Commissioner Margaret Hamburg to Step Down*, REUTERS (Feb. 5, 2015, 1:26 A.M.), https://www.reuters.com/article/us-fda-hamburg-resignation-exclusive/u-s-fda-commissioner-margaret-hamburg-to-step-down-idUKKBN0L90GT20150205 ("Under Hamburg, the agency introduced multiple measures to speed

retaliations against employee whistleblowers bringing attention to dangerous products.[558] Commissioner Andrew von Eschenbach participated in the corrupt ReGen scandal,[559] admitted to wanting drugs to come to market "as quickly as possible,"[560] and decried FDA's conflict-of-interest rules.[561] Commissioner Scott Gottlieb had connections with more than twenty pharmaceutical companies; according to Daniel Carpenter, he was the "most interest-conflicted commissioner in American history, by far."[562] Dr. Gottlieb has framed FDA's search for "extreme certainty" about drugs' effectiveness to be too burdensome, and has sought to move decisions from the FDA level to the physician level—implying more lenient review.[563] Commissioner Robert Califf accepted millions from life sciences companies[564] and believes the American public craves faster access to drugs despite the risks. Dr. Califf prevailed over the other candidate for commissioner likely because of pharmaceutical industry support.[565] Nine of the last ten commissioners wound up working for the pharmaceutical industry.[566]

Corporations, through their power over Congress and the President, have influenced the appointments process and pushed for pro-industry FDA Commissioners. The last truly public-health-oriented Commissioner was Dr. David Kessler. His tobacco efforts throughout the 1990s helped shift the tide of smoking by expanding public knowledge and highlighting the moral questions about tobacco production and promotion.[567] These efforts bolstered the massive tobacco litigation in the 1990s.[568] And while FDA loosened regulations during the Reagan Administration in the early 1980s, leading many to view FDA as

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new products to the market.").

558 Ellen Nakashima & Lisa Rein, *FDA Staffers Sue Agency over Surveillance of Personal E-Mail*, WASH. POST (Jan. 29, 2012), https://www.washingtonpost.com/world/national-security/fda-staffers-sue-agency-over-surveillance-of-personal-e-mail/2012/01/23/gIQAj34DbQ_story.html.

559 LENZER, *supra* note 453, at 139.

560 Meredith Wadman, *Many Issues in Store for New FDA Commissioner*, 4 NATURE REVS.: DRUG DISCOVERY 871, 872 (2005).

561 Andrew von Eschenbach, *Toward a 21st-Century FDA*, WALL ST. J. (Apr. 15, 2012), https://www.wsj.com/articles/SB10001424052702303815404577331673917964962.

562 Julia Belluz, *Scott Gottlieb, the New FDA Chief, Explained*, VOX (May 10, 2017), https://www.vox.com/2017/3/10/14887290/scott-gottlieb-fda-trump.

563 *Id.*

564 Owermohle & Cancryn, *supra* note 316.

565 *See* Matthew Perrone, *New FDA Chief Can't Come Soon Enough for Beleaguered Agency*, AP NEWS (Oct. 8, 2021), https://apnews.com/article/coronavirus-pandemic-joe-biden-science-business-health-62291dd94de2ec922bd9a76cbf389d66; *supra* Section II.B.6.

566 Katherine Ellen Foley, *Trust Issues Deepen as Yet Another FDA Commissioner Joins the Pharmaceutical Industry*, QUARTZ (July 1, 2019), https://qz.com/1656529/yet-another-fda-commissioner-joins-the-pharmaceutical-industry.

567 ALLAN M. BRANDT, THE CIGARETTE CENTURY: THE RISE, FALL, AND DEADLY PERSISTENCE OF THE PRODUCT THAT DEFINED AMERICA 397 (2007).

568 *Id.*; *Former FDA Chief David Kessler Discusses Tobacco Battle in Book*, CNN (Jan. 17, 2001, 2:47 P.M. E.S.T.), https://www.cnn.com/2001/books/news/01/17/david.kessler/index.html.

"bumbling" and "a target under constant attack," Dr. Kessler asserted his will to restore the credibility of FDA—"and the only way to do that is to focus on strong enforcement. We are going to enforce the law."[569] Dr. Kessler's revitalizing spirit—aimed at turning FDA "into a truly effective regulatory agency"[570]—was an outlier. And while the forces on FDA are many, as described above, FDA's capitulation to a neoliberal perspective on "innovation" might not have occurred without industry influence over FDA leadership.

III. CONSEQUENCES OF ERODED FDA REVIEW

This Part will examine the public losses stemming from eroded premarket review. It will also review the counterargument that premarket review's erosion is actually beneficial.

A. Public Health Failures

Public health failures from the fall of FDA review include the marketing of dangerous products, undermining FDA's information production function, damaging the reputation and effectiveness of American health care business, and creating a font of legitimacy that discourages other efforts to address product harms.

Most pressingly, numerous lives could have been saved if premarket review successfully performed its gatekeeping role to protect Americans from dangerous and ineffective products. Table 1 describes the lives lost that could be attributed to faltering premarket review, which easily number in the millions.[571] It is possible that American products explain at least part of the country's larger morbidity and mortality burden compared with peer countries. As the National Academies of Sciences concluded in a 2013 report, "The United States spends much more money on health care than any other country. Yet Americans die sooner and experience more illness than residents in many other countries."[572] A 2018 study looking at mortality trends found that, in many states, probability of death has recently increased for some age groups, largely due to substance use (e.g., opioids) and dietary risk factors.[573] In addition, the study found that the biggest risk factors for deaths and disability-adjusted life years in the U.S. were tobacco use, dietary risk factors, high blood sugar, high blood pressure, and

569 Burkholz, *supra* note 75.

570 *Id.*

571 *See supra* Table 1.

572 NAT'L ACADS. OF SCIS., U.S. HEALTH IN INTERNATIONAL PERSPECTIVE: SHORTER LIVES, POORER HEALTH ix (2013).

573 *The State of US Health, 1990–2016*, 319 JAMA 1444, 1458 (2018).

alcohol/drug use,[574] all of which are related to the continued use and propagation of tobacco, ultraprocessed foods high in salt and sugar, and opioid use. The scales today are tipped in favor of more products with less evidentiary support and less oversight. Public health suffers when we fail to take seriously the harms resulting from FDA-regulated products, emphasizing only the benefits. Likewise, there is insufficient attention to compounding downstream harms. Patients may need surgery to remove faulty devices (e.g., my mother's faulty hip);[575] or medical care to recover from addiction, obesity, or other diseases caused by FDA-regulated products. Financially speaking, the U.S. government and other governments and payors pay billions, even trillions, for these products[576]—some of which could be used to restore FDA to better assess these products in the first instance.

Faltering premarket review not only endangers Americans' health, but also, by failing to produce reliable evidence about product efficacy, undermines the evidence base on which medicine depends. The inevitable downside of rushing products to market is growing uncertainty about these very products. Per Wendy Netter Epstein, a simple "dud" product with no safety issues can nevertheless cause significant harm: harm to government finances, public trust, and future innovation.[577] Every time a person uses a "quack" product, they are deprived of the opportunity to consume effective products and treatments. As Amy Kapczynski has noted, FDA exists largely to solve the "enormous challenges associated with producing and validating high-quality information" about FDA-regulated products.[578] Faltering premarket review jeopardizes this core information-production function. Health law scholars such as Christopher Robertson have argued we have been "shopping in the dark" for medical products for years.[579] The reason is that we "generally failed to invest in a reliable and systematic approach to the production of knowledge about the efficacy of health care we consume."[580] Further, it is impossible for the average

574 *Id.* at 1451.

575 *See supra* Introduction.

576 In the single year of 2021, U.S. health care spending on prescription drugs was $603 billion. *Trends in Prescription Drug Spending, 2016-2021*, ASS'T SEC'Y FOR PLAN. & EVALUATION (Sept. 2022), https://aspe.hhs.gov/sites/default/files/documents/88c547c976e915fc31fe2c6903ac0bc9/sdp-trends-prescription-drug-spending.pdf. That figure does not include non-prescription drugs, devices, other product areas, or costs incurred to remedy harms from FDA-regulated products.

577 Wendy Netter Epstein, *Disrupting the Market for Ineffective Medical Devices*, *in* COHEN ET AL., *supra* note 453, 179, 187–88.

578 Amy Kapczynski, *Dangerous Times: The FDA's Role in Information Production, Past and Future*, 102 MINN. L. REV. 2357, 2359 (2018); Eisenberg, *supra* note 58.

579 CHRISTOPHER T. ROBERTSON, EXPOSED: WHY OUR HEALTH INSURANCE IS INCOMPLETE AND WHAT CAN BE DONE ABOUT IT 178 (2019).

580 *Id.* at 183.

American to evaluate whether a product works and is safe.[581] While the efficacy issue seems mainly applicable to medical products, e-cigarette manufacturers frequently claim or imply people can use their products for smoking cessation.[582] Likewise, other types of manufacturers engage in healthwashing,[583] i.e., making unverified health claims on the packaging of foods, dietary supplements, and cosmetics. One can imagine a more robust FDA that provides more certainty about the safety and effectiveness of the products we consume on a daily basis.

What's more, the fall of premarket review causes long-term damage to American business. Products that prove harmful or non-useful can draw increased public scrutiny of a sector, reduce trust in agency review, and cause public health harms that damage product legitimacy. With regard to LDTs, FDA policies helped protect the integrity of the COVID-19 testing market—until the Trump Administration interfered.[584] In the case of e-cigarettes, some companies marketed to youth and drove an arms race of increasing nicotine concentrations and youth marketing, which de-legitimized the entire industry.[585] For metal-on-metal hips, new devices stole market share from the tried-and-true ceramic hips, yet were often recalled and removed from patients due to severe health harms.[586] These cases suggest that faltering premarket review can undermine trust in a market sector and drain market share from responsible manufacturers. And generally, a new product for a particular purpose reduces the benefit businesses will receive for further innovating in that space.[587] While subverting premarket review can have immediate economic gains for some manufacturers, it works damage on U.S. industry and long-term innovation.

But there is more: even where premarket review is in tatters, the legal regime's very existence generates a patina of safety and legitimacy that discourages other measures. FDA continues to praise itself as the guardian of public health, promising that it ensures the safety of drugs, foods, devices, medical tests, tobacco products, and more.[588] Courts have taken these proclamations to heart. In *Riegel v. Medtronic*,[589] the Supreme Court justified preemption of state tort law on the grounds that the device premarket approval

581 *See* Kapczynski, *supra* note 578, at 2358.

582 Catherine L. Jo et al., *Effects of E-cigarette Advertising Messages and Cues on Cessation Outcomes*, 4 TOBACCO REG. SCI. 562, 569 (2018).

583 *See* Raffael Heiss, Brigitte Naderer & Jörg Matthes, *Healthwashing in High-Sugar Food Advertising: The Effect of Prior Information on Healthwashing Perceptions in Austria*, 36 HEALTH PROMOTION INT'L 1029, 1030 (2020).

584 *See supra* Section II.A.

585 Aaron, *supra* note 4, at 887–88.

586 *See supra* Section II.E.1.

587 DiMagno et al., *supra* note 71, at 923.

588 *What We Do*, U.S. FOOD & DRUG ADMIN. (Mar. 28, 2018), https://www.fda.gov/about-fda/what-we-do.

589 552 U.S. 312 (2008).

process is rigorous; but consider that the dangerous Essure device passed through this pathway with only short-term data.[590] In the opioid litigation, defendants often claimed that, because FDA approved a drug as safe and effective, a company could not be held accountable for resulting harms.[591] This argument has had some success, including when the Oklahoma Supreme Court reversed a $465 million judgment against Johnson & Johnson,[592] previously touted as a public health win. The court noted opioids are a "highly regulated industry" that FDA has blessed as safe and effective.[593] Similarly, a California judge has issued a tentative ruling that opioid manufacturers could not have acted unreasonably given federal approval of opioids.[594] Premarket review, then, remains a card to play for defendants in litigation even when it falls short.

B. Erosion as Pro-Public-Health?

For years, legal writers have described benefits to the erosion of premarket review.[595] U.S. life expectancy fell by nearly 2 years between 2018 and 2020, with deeper falls for Black and Hispanic Americans,[596] and the prospect of helping patients increasingly saddled by obesity, diabetes, autoimmune disease, addiction, Alzheimer's disease, and other conditions by lowering the evidentiary threshold for new therapies is tempting. This argument has two flavors.

The first is a simple get-drugs-to-patients argument. It has been argued that FDA is a "paternalistic bureaucracy interposing costly barriers between patients who demand new products and firms that are eager to supply them."[597] Ralph Hall and former FDA Commissioner Andrew Von Eschenbach, for example, have pointed to the earlier availability of devices in Europe compared to the United States in the early 2010s.[598]

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590 *See supra* Section I.E.3.

591 Aaron, *Opioid Accountability*, *supra* note 256, at 632.

592 State ex rel. Hunter v. Johnson & Johnson, 2021 OK 54, 499 P.3d 719.

593 *Id.* at 721, 728.

594 Tentative Decision at 10, California v. Purdue Pharma, L.P. (Cal. Super. Ct. 2021), https://fingfx.thomsonreuters.com/gfx/legaldocs/znpnezybbvl/11012021california_opioid.pdf.

595 *See, e.g.*, *supra* notes 52–56 and accompanying text.

596 Steven H. Woolf, Ryan K. Masters & Laudan Y. Aron, *Effect of the Covid-19 Pandemic in 2020 on Life Expectancy Across Populations in the USA and Other High Income Countries: Simulations of Provisional Mortality Data*, 373 BMJ (2021), at 1, 3.

597 Eisenberg, *supra* note 58, at 367.

598 Andrew Von Eschenbach & Ralph Hall, *FDA Approvals Are a Matter of Life and Death*, 110 MO. MED. 110, 111 (2013). In the EU, as of 2012, devices were assessed for safety and technical performance, not benefit to patients, and limited evidence was needed. U.S. FOOD & DRUG ADMIN., UNSAFE AND INEFFECTIVE DEVICES APPROVED IN THE EU THAT WERE NOT APPROVED IN THE US 3 (2012). However, the EU has since issued a new Medical Device Regulation. *See* Dana A. Elfin, *Device Makers Could Face Approval Lags Under New EU Rule*, BLOOMBERG LAW (Dec. 11, 2018), https://news.bloomberglaw.com/pharma-and-life-

The canonical example of drugs-into-bodies arguments is the story of HIV/AIDS. HIV was a public health and health equity emergency. It spread rapidly through the United States in the 1980s and peaked in the 1990s; by 2001, it killed a cumulative 448,060 Americans.[599] ACT UP, and other LGBTQ advocacy organizations, are credited with pressuring FDA to expand access to unapproved HIV medications and speed up approvals.[600] However, AIDS activists themselves generally sought to preserve FDA's drug review regime,[601] and they successfully pushed FDA to provide drug access in ways that preserved clinical research and therefore premarket review.[602] Specifically, FDA policy preserved trials, but added a "parallel track" providing drugs for people with HIV/AIDS who were ineligible to join a trial.[603] Unfortunately, AIDS activism was *partially* coopted by industry and libertarian activists to justify a "getting drugs into bodies" approach that aligned with corporate interest in earlier revenue within the drug lifecycle.[604] But the drugs that have saved many lives from HIV show the power of premarket review's presence, not its absence. After all, we would not know which drugs work today if we did not invest in evidence generation, which is difficult when drug access is freely provided. In the words of Congressman Henry Waxman, we must have "limited distribution today, so that we will have adequate information for tomorrow."[605]

The second flavor of argument advancing the benefits of premarket review's erosion involves reorientation toward the postmarket setting, the idea being that postmarket studies allow for patient access contemporaneous with evidence generation. For example, Shannon Gibson and Trudo Lemmens have framed the

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sciences/device-makers-could-face-approval-lags-under-new-eu-rule. Therefore, Hall and Eschenbach's longing for the EU's fast approach holds some irony.

599 *HIV and AIDS — United States, 1981–2000*, 50 MORBIDITY & MORTALITY WKLY. REP. 430, 430 (2001).

600 Lewis A. Grossman, *FDA and the Rise of the Empowered Patient*, *in* LYNCH & COHEN, 59, 65–67, *supra* note 23; *A Timeline of HIV/AIDS*, AIDS.GOV, at 1, 3–5, https://files.hiv.gov/s3fs-public/aidsgov-timeline.pdf.

601 Grossman, *supra* note 178, at 715.

602 *Id.* at 721.

603 *Id.* at 725.

604 *Id.* at 706, 740 (explaining the long-term impact of some activists' embrace of "libertarian and industry allies" on the arc of FDA's regulatory regime, which some activists fear has "created a monster they can no longer control"); Michael Specter, *How ACT UP Changed America*, NEW YORKER (June 7, 2021), https://www.newyorker.com/magazine/2021/06/14/how-act-up-changed-america (according to one prior activist, "I don't think that we realized at the time that this was part of the broader gutting of the FDA that we've seen since . . . . [T]here's a really strong pharmaceutical lobby against the FDA as well that I don't think we were aware of.").

605 Grossman, *supra* note 178, at 721 (quoting *AIDS Issues: Parallel Track Proposal for Clinical Drug Development: Hearing Before the Subcomm. on Health and the Env't of the H. Comm. on Energy and Commerce*, 101st Cong. 1 (1989) (statement of Henry A. Waxman, Chairman, Subcomm. on Health and the Env't of the H. Comm. on Energy and Commerce)).

"fixation" with premarket regulatory activity as "premarket syndrome" and argued that there is an "artificial dichotomy" between pre- and postmarket regulation.[606] H-G Eichler and colleagues argue for "adaptive licensing," in which data is gathered iteratively rather than for a single review process, which could speed drug access for patients.[607] Many patient groups have pushed for such access—of course, usually with substantial industry sponsorship.[608]

These arguments about innovation, to a degree, would benefit from further exposition on what innovation *is.* If innovation is "anything new," then premarket review probably obstructs innovation. Indeed, this is the popular conception of innovation. For example, the Congressional Budget Office assesses new pharmaceutical legislation for how many fewer new drugs will be marketed in the future,[609] regardless of their safety or effectiveness. Fortune lists the most innovative pharmaceutical companies based on number of approvals and sales.[610] The likely reason that approvals carry such meaning is there is a baseline level of trust in the significance of an FDA approval.

But FDA scholars have been chipping away at the idea that new products, even with an FDA blessing, are necessarily innovative. Zeke Emanuel points out that a minority of new drugs have significant benefits over existing therapies.[611] Former FDA Commissioner Dr. Scott Gottlieb famously postponed premarket review for all e-cigarettes to facilitate tobacco product innovation[612]—to encourage "different technologies to deliver nicotine . . . that doesn't bring with it the deadly consequences of burning tobacco."[613] A year later, he made the startling admission that neither he nor FDA foresaw that this decision would

606 *See* Shannon Gibson & Trudo Lemmens, *Overcoming "Premarket Syndrome": Promoting Better Postmarket Surveillance in an Evolving Drug-Development Context*, *in* LYNCH & COHEN, *supra* note 23, at 268–69.

607 H-G Eichler et al., *Adaptive Licensing: Taking the Next Step in the Evolution of Drug Approval*, 91 CLINICAL PHARMACOLOGY & THERAPEUTICS 426, 428 (2012).

608 Alice Fabbri et al., *Industry Funding of Patient and Health Consumer Organisations: Systematic Review with Meta-Analysis*, BMJ (Jan. 22, 2020), at 1, 11; Susannah L. Rose et al., *Patient Advocacy Organizations, Industry Funding, and Conflicts of Interest*, 177 JAMA INTERNAL MED. 344, 347 (2017).

609 *See, e.g.*, John LaMattina, *CBO Report Shows Enacting Drug Pricing Legislation Will Result in Fewer New Drugs*, FORBES (Apr. 12, 2021, 3:02 PM EDT), https://www.forbes.com/sites/johnlamattina/2021/04/12/cbo-report-shows-enacting-drug-pricing-legislation-will-result-in-fewer-new-drugs/?sh=2baaf77c415b.

610 Sy Mukherjee & IDEA Pharma, *The Most Innovative and Inventive Drug Companies of 2022 Set the Foundation for Success Before the Pandemic*, FORTUNE (Apr. 20, 2022, 5:30 AM EDT), https://fortune.com/2022/04/20/top-pharmaceutical-companies-innovation-invention-2022.

611 Ezekiel Emanuel, *Opinion: Why We Can Have Both Innovative Drugs and Lower Drug Prices*, POLITICO (Oct. 13, 2021, 4:30 AM EDT), https://www.politico.com/news/agenda/2021/10/13/drug-companies-innovation-prices-false-choice-515844.

612 Aaron, *supra* note 4, at 847.

613 Gottlieb, *supra* note 349.

accelerate a youth e-cigarette crisis.[614] Daniel Hemel and Lisa Ouellette have chipped away at simplistic notions of innovation, arguing that current innovation institutions helped generate the opioid crisis.[615] They note that Purdue Pharma's OxyContin, which arguably incited the opioid crisis, was probably neither safe nor effective despite receiving FDA approval.[616] As I discuss above, FDA has made haste to speed development of new opioid drugs,[617] arguably favoring "innovation" over a more evidence-based approach. Altogether, FDA-approved opioids have killed more than 263,000 Americans,[618] not including those who started with prescription opioids but migrated to illicit drugs. These "innovation failures," and many others discussed throughout this Article, suggest speeding new products to market carries the risk of seriously injuring, even killing, patients.

Some might still favor postmarket surveillance to premarket review because it couples earlier access with evidence generation. However, postmarket efforts cannot make up for damaged premarket review. To begin with, evidence is difficult to gather in the postmarket setting because patients can obtain drugs through their physicians and have little reason to join a clinical trial, where they might receive the placebo.[619] Even if evidence could be easily gathered during marketing, preventing harms offers more public good than mitigating them, particularly when the harm is potentially severe (e.g., for a product that can cause addiction). Moreover, removing a product from the market is considerably harder than denying it in the first place.[620] There may arise a property interest in the trademark and associated goodwill, leading to litigation over takings or due process.[621] Other types of claims may lead courts to block efforts to remove products from the market.[622] Current users may push for continued access for themselves even if the drug carries net harms.[623] And companies can use the resources gained from sales to contest FDA action. Were FDA to proceed with

614 U.S. FOOD & DRUG ADMIN., *supra* note 358.

615 Hemel & Ouellette, *supra* note 47.

616 *Id.* at 16–17.

617 *See supra* Section II.B.3.

618 CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 11.

619 Aaron et al., *supra* note 235, at 2395.

620 *Id.*; Herder, *supra* note 4, at 841.

621 *See* 65 Fed. Reg. 1000, 1041–42 (2000).

622 *See, e.g.*, Matt Richtel, Lauren Hirsch & Andrew Jacobs, *Juul Gets Temporary Reprieve to Keep Selling Its E-Cigarettes*, N.Y. TIMES (June 24, 2022), https://www.nytimes.com/2022/06/24/health/juul-ecigarettes-ban.html.

623 LEWIS A. GROSSMAN, CHOOSE YOUR MEDICINE: FREEDOM OF THERAPEUTIC CHOICE IN AMERICA 257–61 (2021) (describing patient resistance to withdrawing bevacizumab's breast cancer indication despite a "lack of 'credible, objective evidence that the drug is safe and effective'" (quoting Commissioner Margaret Hamburg)).

withdrawal, it stands in the position of discrediting its prior approvals.[624] Further, FDA does not have the resources to surveil the more than 20% of the economy that it regulates.[625] Postmarket surveillance remains underresourced and arguably ineffective.[626]

I would advance that real innovation does not happen through deregulating FDA. Without robust premarket review, new "innovations" coming to market may actually be anti-innovation. For one, they may damage public trust in FDA and the products it regulates. For two, without the information generated by robust premarket review, it is difficult to identify true innovations. The United States has a crisis of not knowing which medical products are effective, given a lack of clinical evidence at the time of approval.[627] In the words of Dr. Rita Redberg, "True innovations are welcomed, but cannot be recognized as such without clinical trial evidence to show that new technologies are beneficial for patients."[628] The trial evidence required for new products continues to decline, the latest and most severe example being real-world evidence.[629] For three, new "true" innovations may be harder to bring to market if there are unproven products already on the market—a phenomenon some have called "crowding out."[630] Pharmaceutical companies are well aware that being first-to-market carries the most financial returns.[631] Daniel Carpenter calls this invisible asset "market space."[632] In these ways, the fall of premarket review may paradoxically be anti-innovation. To the extent actual innovation does arise from premarket review's erosion, it would have to be weighed against the immense public health cost of allowing life-threatening products on the market, the subversion of evidence-based medicine,[633] and other public health failures that premarket

624 Dhruva, *supra* note 453, at 224.

625 Aaron, *Opioid Accountability*, *supra* note 256, at 649 (describing FDA's budget as "shoestring"); *Executive Summary: Strategic Plan for Regulatory Science*, U.S. FOOD & DRUG ADMIN. (Mar. 29, 2018), https://www.fda.gov/science-research/advancing-regulatory-science/executive-summary-strategic-plan-regulatory-science (asserting FDA regulates 25 cents of every dollar spent by U.S. consumers).

626 LENZER, *supra* note 453, at 114 (comparing FDA's device surveillance to using a Ouija board); Curt D. Furberg et al., *The FDA and Drug Safety: A Proposal for Sweeping Changes*, 166 ARCHIVES OF INTERNAL MED. 1938, 1938 (2006).

627 ROBERTSON, *supra* note 579, at 174, 178–83.

628 *FDA Medical Device Approval: Is There a Better Way?: Hearing Before the Subcomm. on Health Care, D.C., Census and the Nat'l Archives of the H. Oversight and Gov't Reform Comm.*, 112th Cong. 200 (2011) (testimony of Dr. Rita Redberg).

629 *See supra* Sections I.C.6, I.D.

630 DiMagno et al., *supra* note 71, at 923.

631 *See* Tracy Staton, *First-to-Market Launch? Bonus--But Double Bonus If You're Big Pharma*, FIERCE PHARMA (Sept. 17, 2014), https://www.fiercepharma.com/sales-and-marketing/first-to-market-launch-bonus-but-double-bonus-if-you-re-big-pharma.

632 Carpenter et al., *supra* note 59, at 316.

633 *See* Eisenberg, *supra* note 58, at 347 (noting FDA processes produce significant value

review's fall engenders.[634]

Nor can it be argued that the examples throughout this Article are outliers in an otherwise functioning regime. There are many cases of devastating harm for all discussed product types. Further, for some product areas, such as for food additives, lab-developed tests, and many tobacco products, premarket review is largely defunct. The claim that a process is working well after it has been nearly eliminated is untenable. Ultimately, many premarket review decisions appear to be driven not by FDA, but by reactivity to politics, lawsuits, and resource issues. These problems are not the hallmark of a well-functioning system, but one that has been torn apart by constant attack.

IV. SOLUTIONS

I offer two proposals to reinvigorate premarket review today. The first is statutory reform of premarket review across all product areas—the FDA Premarket Review Restoration Act (FDAPRRA). I am not the first to propose strengthening premarket review. Lawmakers have introduced bills to improve premarket review of food additives,[635] laboratory-developed tests,[636] drugs,[637]

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through evidence generation).

634 *See supra* Section II.A.

635 Ensuring Safe and Toxic-Free Foods Act of 2022, S.4316, 117th Cong. (2021–2022). This bill accepts the GRAS regime but makes a series of adjustments, including requiring FDA to make a determination that it has received "sufficient notice" of a manufacturer's self-determination of GRAS, § 2(b)(2)(A)(i); requiring notice-and-comment before marketing of a GRAS product, *id.* § 2(b)(2)(B)(ii); barring likely carcinogens from being GRAS, § 2(b)(2)(C); mandating at least ten reviews of old GRAS substances every three years (a slow pace), *id.* § 3(c); and tweaking the criteria for being "unsafe", *id.* § 3(d)–(e). The bill does not provide extra funding, provide FDA additional independence from outside influence, require FDA to spend certain appropriations only on food additive review, or place FDA in a greater role of reviewing food additives than simply determining it has received "sufficient notice."

636 VALID Act of 2021, S.2209, 117th Cong. (2021–2022). This lengthy and complex bill for the regulation of in vitro clinical tests adopts problematic provisions such as least burdensome requirements, *id.* § 587B(j); "efficient and flexible approaches to expedite" breakthrough products, *id.* § 587C(a); user fee funding, *id.* § 9(b); privatized premarket review, *id.* § 587P; and numerous exceptions to premarket review, *id.* § 587A(a)(4)(A).

637 Accelerated Approval Integrity Act of 2022, H.R.6963, 117th Cong. (2021–2022). A modified version of this statute was passed as part of the Food and Drug Omnibus Reform Act of 2022 (FDORA), within the Consolidated Appropriations Act, 2023, Pub. L. No. 117–328, 136 Stat. 4459 (2022). While these provisions reduce delays in confirmatory studies and slightly reduce the cumbersome withdrawal procedures, the withdrawal procedures are still excessive, and FDA retains discretion to go far beyond safety and effectiveness within the accelerated approval program. Jeff Craven, *FDA Withdraws Pre-Term Birth Drug Makena*, REGUL. FOCUS (Apr. 5, 2023), https://www.raps.org/news-and-articles/news-articles/2023/4/fda-withdraws-pre-term-birth-drug-makena. Nor did this reform infuse FDA with needed funding or transition its funding source from industry user fees to appropriations.

opioids,[638] and more. These bills generally create half-measures for specific product areas and are arguably band-aids for long-term problems. That is because the real problem facing FDA is financial power (largely corporations'), not simple statutory problems.[639] Even my suggested statute, FDAPRRA, despite being cross-product-area, may suffer from some of the same problems, although it is much more ambitious, cross-disciplinary, and structural than the above bills. The second proposal is a deeper reckoning with corporate influence and changes in the law that undermine agencies' core functions.

A. FDA Premarket Review Restoration Act (FDAPRRA)

Congress represents the most direct route for reform. Although passing pro-regulatory statutes is not easy, Congress has proven uniquely willing to do so throughout FDA's history.[640] And given statutes can adjust most of the forces undermining premarket review (e.g., statutory defects, court decisions, funding, etc.), they are a powerful tool. Agencies are creatures of statute, after all.

A commonly advanced solution is to refashion FDA as an independent agency, as seven former FDA Commissioners have urged.[641] Certainly, protecting FDA's Commissioner from termination would insulate the agency from presidential and HHS control, which have damaged certain areas of premarket review (e.g., laboratory-developed tests). However, I believe this solution alone fails to grapple with the reasons for premarket review's fall that I have described. Figure 1 indicates that all three branches of government, as well as ideological capture and resource deprivation, contribute to premarket review's erosion, so insulating FDA from presidential control is a mere half-measure. Further, it may even be counterproductive. Under current law,[642] an independent FDA would have multiple heads, which could politicize FDA leadership and create standstills, as it has for the Federal Election Commission.[643]

Instead, FDAPRRA would grant FDA independent litigating authority. According to former FDA Commissioner Margaret Hamburg, "[A] strong FDA enforces the law."[644] Yet FDA enforcement actions appear to have declined over

638 FDA Accountability for Public Safety Act, S.1439, 117th Cong. (2021–2022).

639 Of course, the exercise of corporate power can lead to statutory problems.

640 *See supra* Section I.A.

641 Califf et al., *supra* note 44, at 84.

642 Seila Law, LLC v. CFPB, 140 S. Ct. 2183, 2211 (2020) (holding that a single individual wielding "significant executive power" in leading an agency must be removable at will). Therefore, the only way for FDA to be independent is for it to have multiple heads.

643 *See* Brian Naylor, *The Federal Election Commission Can Finally Meet Again. And It Has a Big Backlog*, NPR (Dec. 24, 2020), https://text.npr.org/949672803 (describing structural issues in multi-headed Federal Election Commission, including lack of quorum, internal disagreement, and partisan deadlocks).

644 HUTT ET AL., *supra* note 37, at 166 (emphasis removed).

the last fifteen years.[645] Currently, FDA relies on DOJ to prosecute firms that bring products to market without authorization. Kirti Datla and Richard Revesz have argued that DOJ control over litigation leads to less enforcement and, because DOJ conducts its affairs in secret with significant financial independence, reduces accountability to Congress.[646] Therefore, DOJ control increases the probability of nullifying congressional premarket review requirements. A legal agency with minimal experience or interest in public health[647] should not have authority to create de facto *post*market review by vetoing FDA enforcement, as it appeared to do for tobacco products.[648] To fulfill science-based premarket review, FDA needs independent litigating authority, more than agency independence, to prosecute violators. This litigating authority could be limited to enforcing against unreviewed products—essentially cookie-cutter cases that hardly require the litigation expertise of DOJ. Other agencies, which often have much broader litigation authorities, could serve as a model. For example, the Consumer Finance Protection Bureau has authority to "seek all appropriate legal and equitable relief" for consumer protection violations and "may act in its own name and through its own attorneys."[649]

Another persistent problem is FDA's consistent use of enforcement discretion to vitiate statutory mandates. FDAPRRA would declare with clarity that premarket review for a listed set of product categories is mandatory, and products must pass through at least one pathway involving FDA review to enter the market. Then, the Act could assign mandatory action from FDA for illegally marketed products. Courts have recognized that mandatory language in statutes can impose affirmative obligations on FDA.[650] For example, the D.C. Circuit held in 2013 that FDA must follow FDCA's importation provisions, which *require* FDA to take certain actions when a manufacturer attempts to import violative drugs.[651]

Mandatory action, applied to premarket review, could foreclose FDA laying down enforcement discretion or other lenient policies over entire categories of products, as it did with laboratory-developed tests, e-cigarettes, and food

645 *See id.* at 165; Charles Piller, *Exclusive: FDA Enforcement Actions Plummet Under Trump*, SCIENCE (Jul. 2, 2019), https://www.science.org/content/article/exclusive-fda-enforcement-actions-plummet-under-trump. It is true some types of FDA actions increased in number at various points over the last fifteen years, HUTT ET AL., *supra* note 37, at 165, but FDA also gained authority over tobacco products, *supra* Section II.C.1.

646 Kirti Dalta & Richard L. Revesz, *Deconstructing Independent Agencies (and Executive Agencies)*, 98 CORNELL L. REV. 769, 801–02 (2013).

647 Daval, *supra* note 378, at 8.

648 *See supra* Section II.C.

649 12 U.S.C. § 5564(a)–(b).

650 *See, e.g.*, Am. Acad. of Pediatrics v. FDA, 379 F. Supp. 3d 461 (D. Md. 2019); Cook v. FDA, 733 F.3d 1, 12 (D.C. Cir. 2013).

651 *Cook*, 733 F.3d at 12.

additives. In addition, it would help prevent HHS, DOJ, and the President from interfering with premarket review. Naturally, such mandatory action could require significant resources, but Congress could require smaller steps needing fewer resources. For example, a statute could say that, where FDA is informed of violative products, it "shall issue" a notice to such manufacturer of the violation and it "shall refuse" imports. Given manufacturing often occurs abroad, importation restrictions could significantly reduce the marketing of unauthorized products, while leveraging existing processes within Customs and Border Protection. In addition, manufacturers subject to premarket review should be required to submit notices to FDA to sell products, which would trigger these clauses. Likewise, statutorily mandated action would empower public health organizations to submit notices to FDA that trigger the action. Together, these measures pare back the discretion that FDA, HHS, and DOJ have leveraged to spare manufacturers from statutory premarket review requirements.

FDAPRRA must reduce the impact of industry litigation on premarket review. Mandatory action would forestall some industry litigation, as it is difficult to argue that FDA has acted not in accordance with law when it has followed statutory commands. In addition, Congress, having the power to shape federal courts, could remove industry causes of action to challenge premarket review.[652] Courts do not have the expertise to supervise FDA's scientific decisions, and many industry cases serve to deter, or defer, FDA enforcement rather than to win on the merits. Appeals of denials should operate exclusively through the administrative process, which could involve another scientific agency to improve objectivity. Congress must also stipulate that companies may not market products during appeals of an FDA denial and forbid federal courts from enjoining enforcement of premarket review requirements.[653] One limitation of this solution is Congress may have limited power to remove constitutional claims related to premarket review,[654] but this aspect may be a feature rather than a bug.

In addition, the statute could patch loopholes and design problems that have hollowed out premarket review. These fixes would include ending the arguable loopholes for devices and food additives (i.e., the 510(k) and GRAS pathways[655]); restricting the use of expedited programs such as accelerated approval; vesting premarket review authority in FDA leadership, rather than

652 For further discussion of Congress limiting federal jurisdiction or relief, see *Federal Jurisdiction:* Patchak v. Zinke, 132 HARV. L. REV. 297 (2018).

653 *See, e.g.*, Wages & White Lion Invs. v. FDA, 16 F.4th 1130 (5th Cir. 2021) (enjoining FDA market denial order pending review); Wages & White Lion Invs. v. FDA, 41 F.4th 427 (5th Cir. 2022) (changing course and denying manufacturer's petition for review), *rehearing en banc granted*, 58 F.4th 233 (5th Cir. 2023).

654 John F. Preis, *In Defense of Implied Injunction Relief in Constitutional Cases*, WM. & MARY BILL OF RTS. J. 1, 51–53 (2013).

655 *See supra* Sections II.D–E.

HHS, to prevent "un-delegation";[656] requiring two clinical trials for new products sold for specific health purposes; requiring surrogate endpoints to have clearly established links to clinical outcomes; and ending the user-fee legislative cycle that repeatedly weakens premarket review. These changes would empower FDA to hold new products to appropriate standards while erecting barriers to countervailing corporate influence.

Some of these measures would require an already resource-starved FDA to spend more money. As discussed, for food additives,[657] laboratory-developed tests,[658] and devices,[659] resource deprivation by Congress (and, by extension, its lobbyists) has made it difficult to support robust premarket review programs. Similarly, the drugs program historically faced backlogs.[660] Recently, tobacco premarket review, the newest variety, appears to be struggling. Not only is FDA managing a morass of tobacco applications, but it also has stayed some of its own marketing denial orders, including Juul's, citing "scientific issues."[661] Juul had alleged that FDA overlooked more than 6,000 pages of safety data,[662] and it is possible FDA was concerned the allegation was true.

There is no way around a strong infusion of resources into the agency to support its core premarket review function. User fees provide too much control by industry over the legislative process and bestow too much negotiating leverage on the companies FDA regulates. The money must come from direct appropriation.

One serious issue in transitioning to a truly mandatory premarket review regime is a phase-in protocol—i.e., how to handle existing products on which people might depend. Congress has historically had trouble handling products that were already on the market. Every FDA regime handles the phase-in process differently.[663] Moreover, a mandatory review regime could immediately lead to

656 The FDCA gives authority to the Secretary of HHS, which HHS delegates to FDA.

657 *See supra* Section II.D.

658 *See supra* Section II.A.

659 *See supra* Section II.E.

660 CONG. BUDGET OFF., HOW INCREASED COMPETITION FROM GENERIC DRUGS HAS AFFECTED PRICES AND RETURNS IN THE PHARMACEUTICAL INDUSTRY 17 (1998), https://www.cbo.gov/sites/default/files/105th-congress-1997-1998/reports/pharm.pdf.

661 *FDA Denies Authorization to Market JUUL Products*, U.S. FOOD & DRUG ADMIN. (June 23, 2022), https://www.fda.gov/news-events/press-announcements/fda-denies-authorization-market-juul-products.

662 Ian Krietzberg, *Juul Seeks to Extend Stay on FDA Ban, Saying Agency Did Not Evaluate All Its Evidence*, CNBC (June 28, 2022), https://www.cnbc.com/2022/06/28/juul-seeks-to-extend-stay-on-fda-ban-saying-agency-did-not-evaluate-all-its-evidence.html.

663 *Compare* Hutt et al., *supra* note 37, at 1215 (exempting preexisting Class III devices from premarket review, and any substantially equivalent devices), *with* Carpenter, Greene & Moffitt, *supra* note 59, at 312–14 (conducting rigorous panel reviews for preexisting drugs followed by withdrawal orders for those deemed ineffective), *and with supra* Section II.C.1 (exempting preexisting tobacco products and substantially equivalent products from premarket review).

the submission of millions of applications to FDA and unpredictable product shortages.

The answer to the phase-in problem is not to "grandfather" millions of products, but to invest billions of dollars in studying the technologies we have allowed onto the market without review. A historical model is the Drug Efficacy Study Initiative (DESI), which took place after Congress updated the FDCA to require efficacy data for new drugs.[664] Similar to DESI, panels of experts could evaluate products and submit reports, or tentative decisions, to FDA scientists. The study should prioritize the highest-risk products, including those mentioned in this Article. DESI appears to have been successful: it likely reduced U.S. mortality by removing ineffective therapies and creating "market space" for better ones.[665] However, it was retrospective—products remained on the market during review. This aspect is unwanted given the severe risks posed by many products that I have discussed in this Article. High-risk products, including those creating substantial public health harms, should be removed from the market indefinitely during the review phase. For some products in common use, such as sugar and salt, particular *uses* of the product should be restricted until review is complete (e.g., sugar over a certain quantity). Congress should define high-risk products and specifically list the most prominent examples, while FDA can gap-fill. Congress could also impose absolute tort liability for high-risk products as an additional incentive for manufacturers to pull them from the market. This type of regime would infuse us with knowledge about the products we use every day that may be harming our health.

B. Addressing Root Causes: Neoliberalism and FDA

These bold changes to premarket review, though worthwhile, are not enough to insulate FDA from neoliberal influence. To begin with, a massive infusion of resources into FDA through appropriations and a strengthening of premarket review would be opposed tooth-and-nail by regulated industry. The bills Congress passes are largely determined by corporations and corporate-funded lobbying organizations.[666] Even if statutory changes were readily possible,

664 Carpenter, Greene & Moffitt, *supra* note 59, at 307–08.

665 *Id.* at 316.

666 *See* MARTIN GILENS, AFFLUENCE AND INFLUENCE: ECONOMIC INEQUALITY AND POLITICAL POWER IN AMERICA 1–2 (2012) ("[U]nder most circumstances, the preferences of the vast majority of Americans appear to have essentially no impact on which policies the government does or doesn't adopt."); Martin Gilens & Benjamin I. Page, *Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens*, 12 PERSPS. ON POL. 564, 577 (2014) ("[P]olicymaking is dominated by powerful business organizations and a small number of affluent Americans . . . ."); Lee Drutman, *How Corporate Lobbyists Conquered American Democracy*, THE ATLANTIC (Apr. 20, 2015), https://www.theatlantic.com/business/archive/2015/04/how-corporate-lobbyists-conquered-american-democracy/390822 ("Corporations now spend about $2.6 billion a year on

political actors, the President, and DOJ can still seek avenues to control (or eliminate) premarket review. Nor would FDAPPRA fully insulate premarket review from federal courts, which have become increasingly aggressive toward administrative agencies.[667] Even the most clever statutory overhaul could suffer from congressional disappropriation or serious litigation challenges. And with the President and Senate co-deciding FDA's leadership, it is likely future FDA Commissioners will continue to favor faster and lighter review at the expense of public health.

When FDA's tools are compromised, it can rely on communication—at least when it is not ideologically captured. If enforcement is impossible, it can issue press releases highlighting the corporate determinants of health.[668] One example of strong communication was FDA's holding e-cigarette companies to the fire for causing surging youth e-cigarette use.[669] This communication strategy helped cement public support for raising the legal age for tobacco products from 18 to 21.[670] Emphasizing the corporate determinants of health can challenge exercises of corporate power and build public support for change. Health movements have historically been powerful tools of social change.[671] FDA could cement these movements by stepping up as a voice of consumer protection.

FDA can also bring more attention to outside attacks on the agency. To do so, it must transition from a "timid," docile, and secretive[672] agency to one that is open with the issues facing it. Again and again, public crises arise and FDA suffers enormous criticism. Instead of engaging, FDA generally spins the facts to

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reported lobbying expenditures—more than the $2 billion we spend to fund the House ($1.18 billion) and Senate ($860 million) . . . . For every dollar spent on lobbying by labor unions and public-interest groups together, large corporations and their associations now spend $34.").

667 *See infra* notes 691–699 and accompanying text.

668 For a discussion of the corporate determinants of health, see Ilona Kickbusch, Luke Allen & Christian Franz, *The Commercial Determinants of Health*, 4 LANCET GLOB. HEALTH e895 (2016); John S. Millar, *The Corporate Determinants of Health: How Big Business Affects Our Health, and the Need for Government Action!*, 104 CANADIAN J. PUB. HEALTH e327 (2013); Aaron, *supra* note 11, at 65.

669 *See, e.g.*, *FDA Takes New Steps to Address Epidemic of Youth E-cigarette Use, Including a Historic Action Against More Than 1,300 Retailers and 5 Major Manufacturers for Their Roles Perpetuating Youth Access*, U.S. FOOD & DRUG ADMIN. (SEPT. 11, 2018), https://www.fda.gov/news-events/press-announcements/fda-takes-new-steps-address-epidemic-youth-e-cigarette-use-including-historic-action-against-more.

670 Aaron, *supra* note 4, at 852–53.

671 Phil Brown et al., *Embodied Health Movements: New Approaches to Social Movements in Health*, 26 SOCIO. OF HEALTH & ILLNESS 50, 51 (2004).

672 *See* Herder, *supra* note 4, at 849. The reasons for FDA's timidity deserve an entire article. Possibilities include: (1) the siloed nature of FDA's centers impairing a broader understanding of premarket review's fall; (2) continued control over FDA leadership through the appointment process, *see supra* Section I.F; (3) a strong corporate push for FDA fostering innovation across all sectors; (4) internal siloing of legislative advocacy and budgeting; (5) FDA attorneys discouraging frank discussion of the agency's weaknesses; and (6) agency rules restricting employee speech.

defend itself despite serious public criticism, which makes the agency look even worse.[673] FDA cannot continue to paint itself as the public guardian for all the products it regulates, while suffering neoliberal influence and public rebuke. It must try to maximize public health, and when it cannot, it should attempt to explain why. For example, after the recent court decision staying approval of the abortion drug mifepristone,[674] FDA could have amplified public anger by highlighting the court's botching of the science and co-opting of FDA's regulatory power.[675] Both HHS and the White House issued (short) statements,[676] while FDA remained silent.[677]

If FDA is considering terminating a review program because of resources (e.g., food additives), it should publicly explain that Congress has not appropriated enough funds. When HHS purports to remove FDA's authority to conduct premarket review (e.g., laboratory-developed tests), FDA should clarify it had no role in the decision and criticize the industry lobbying leading to that outcome.

When the Supreme Court facilitates corporate spending in congressional

673 *See, e.g.*, *supra* notes 369–371 and accompanying text (denying tobacco regulatory failures). After a 2019 Science article concluding that "FDA's compliance and enforcement actions have plummeted since President Donald Trump took office," FDA and Commissioner Dr. Scott Gottlieb were openly defensive. Charles Piller, *Exclusive: FDA Enforcement Actions Plummet Under Trump*, SCIENCE (July 2, 2019), https://www.science.org/content/article/exclusive-fda-enforcement-actions-plummet-under-trump. Despite pressure from the Trump administration to authorize the COVID-19 vaccine, FDA Commissioner Dr. Stephen Hahn denied any pressure and claimed the decision was based on science and evidence. Emily Shapiro, *FDA Commissioner Hahn Denies Reports He Was Threatened with Firing*, ABC NEWS (Dec. 12, 2020, 12:03 P.M.), https://abcnews.go.com/Politics/fda-commissioner-denies-reports-threatened-firing/story?id=74689216. After a 2021 scandal about McKinsey consulting for FDA's drug policy while simultaneously consulting with opioid manufacturers to fend off FDA regulation, FDA asserted, "The agency takes our role awarding contracts seriously and we work to ensure the agency maintains high standards of integrity . . . ." Ian MacDougall, *McKinsey Never Told the FDA It Was Working for Opioid Makers While Also Working for the Agency*, PROPUBLICA (Oct. 4, 2021), https://www.propublica.org/article/mckinsey-never-told-the-fda-it-was-working-for-opioid-makers-while-also-working-for-the-agency.

674 Memorandum Opinion and Order at 67, All. for Hippocratic Med. v. FDA, No. 2:22-CV-223-Z (N.D. Tex. Apr. 7, 2023).

675 *See* Aaron, Brown & Sinha, *supra* note 312 (critiquing judges who felt empowered to reevaluate FDA's scientific judgment in the case challenging the approval of mifepristone).

676 *HHS Secretary Xavier Becerra Statement on Court Rulings on Mifepristone*, DEP'T OF HEALTH & HUM. SERVS. (Apr. 7, 2023), https://www.hhs.gov/about/news/2023/04/07/hhs-secretary-xavier-becerra-statement-court-rulings-mifepristone.html; *Statement from President Joe Biden on the Supreme Court's Decision in* Alliance for Hippocratic Medicine v. FDA, WHITE HOUSE (Apr. 21, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/21/statement-from-president-joe-biden-on-the-supreme-courts-decision-in-alliance-for-hippocratic-medicine-v-fda.

677 For example, a search of FDA's official Twitter account reveals zero tweets containing the words "mifepristone" or "Mifeprex" up through July 7, 2023.

elections and undermines checks on such spending[678]—which subjects FDA to further corporate influence—FDA should help the public understand why this makes its job harder. For an agency with more than 18,000 employees,[679] there is no doubt the agency has much on its tongue. It, and its staff, should say more. FDA (as well as HHS) could amend its ethics regulations to facilitate employee speech on important public health issues; traditionally, the agency requires supervisory approval for employee speech on FDA matters.[680]

Public health communication efforts would help combat the rise of corporate media. Today, six companies control most of American media,[681] and many corporate-funded organizations seek to undermine premarket review. For example, *Filter* magazine, a self-proclaimed harm reduction website, released an article titled "The FDA's Unconscionable Campaign to Destroy Juul" lobbing allegations that FDA, in denying Juul marketing authorization, lied, undermined harm reduction, and triggered a "death sentence for smokers."[682] *Filter* takes funding from Juul.[683] In addition, more than 90% of patient "voices" in PDUFA discussions have historically been funded by pharmaceutical companies.[684] According to Ray Moynihan and Lisa Bero, "The very way we all think about disease—and the best ways to research, define, prevent, and treat it—is being subtly distorted because so many of the ostensibly independent players, including patient advocacy groups, are largely singing tunes acceptable to companies seeking to maximize markets for drugs and devices."[685] FDA could participate more actively in this discourse as a representative of public health.

Of course, what FDA says aloud merits some caution. For example, it would not be wise to publicly state that the agency does not have enough funding to

678 Buckley v. Valeo, 424 U.S. 1 (1976); Citizens United v. Federal Election Commission, 558 U.S. 310 (2010); Ams. for Prosperity Found. v. Bonta, 141 S. Ct. 2373 (2021).

679 U.S. FOOD & DRUG ADMIN., FISCAL YEAR 2023: JUSTIFICATION OF ESTIMATES FOR APPROPRIATIONS COMMITTEES 380 (Mar. 9, 2023), https://www.fda.gov/media/157192/download.

680 *Outside Activity*, U.S. FOOD & DRUG ADMIN. (Mar. 24, 2022), https://www.fda.gov/about-fda/ethics/outside-activity.

681 Ashley Lutz, *These 6 Corporations Control 90% of the Media in America*, BUSINESS INSIDER (June 14, 2012, 9:49 AM EDT), https://www.businessinsider.com/these-6-corporations-control-90-of-the-media-in-america-2012-6; Nicolas Rapp & Aric Jenkins, *Chart: These 6 Companies Control Much of U.S. Media*, FORTUNE (July 24, 2018, 8:00 AM EDT), https://fortune.com/longform/media-company-ownership-consolidation.

682 Helen Redmond, *The FDA's Unconscionable Campaign to Destroy Juul*, FILTER (July 11, 2022), https://filtermag.org/fda-destroy-juul.

683 *Our Supporters*, FILTER (Accessed July 12, 2022), https://filtermag.org/about-the-influence-foundation.

684 David S. Hilzenrath, *Drug Money: In FDA Meetings, "Voice" of the Patient Often Funded by Drug Companies*, POGO (Dec. 1, 2016), https://www.pogo.org/investigation/2016/12/in-fda-meetings-voice-of-patient-often-funded-by-drug-companies.

685 Ray Moynihan & Lisa Bero, *Toward a Healthier Patient Voice: More Independence, Less Industry Funding*, 177 JAMA INTERNAL MED. 350, 351 (2017).

enforce a statutory requirement. Such a statement could elicit illegal activity and potentially create legal risk if the agency is abdicating a responsibility. However, FDA can communicate the same problem in softer terms (e.g., "FDA cannot sufficiently enforce due to resource constraints, and we strongly encourage more funding as soon as possible"). Similarly, FDA might practice some caution in criticizing judges, as it will likely be before those judges in the future. However, it is well within FDA's prerogative to criticize a legal decision on the merits and be part of the public forum engaging with these decisions. In fact, to the extent modern law is especially harmful to agencies, their views ought to be heard.

While FDA should be louder in representing its own interests, it cannot solve the problem on its own. This is so because the forces that have eroded premarket review are larger than the agency: the dominant neoliberal logic that FDA review is fundamentally anti-innovation;[686] increasing corporate ownership and consolidation of media;[687] Senate and President control over appointments; and political disfavor toward social spending and "big government,"[688] especially with rising inflation.

FDA's work is not siloed; other agencies are trying to solve pressing problems yet being rebuffed by all three branches of government and aggressive corporate lobbying. Instead of playing the field alone, FDA must forge alliances with other agencies and institutions—something it already has statutory authority to do.[689] FDA has allied with other organizations before,[690] and joint press statements that offer refreshing honesty could garner public support.

Another issue larger than FDA is that the edifice of law itself grows more aggressive toward agencies with each year. Gillian E. Metzger has written of a boiling anti-administrativism in which judges and libertarian legal scholars assault the administrative state.[691] In 2022, the Supreme Court decided an agency statutory interpretation question without mentioning *Chevron* once,[692] leading commentators to suggest the Court had "shun[ned]" a bedrock administrative law rule.[693] Moreover, the Supreme Court granted certiorari to decide a case in its

686 Eisenberg, *supra* note 58, at 346–47.

687 *See supra* notes 681–685 and accompanying text.

688 NAOMI KLEIN, THE SHOCK DOCTRINE 14–15, 57 (2007).

689 FDCA § 1003(c).

690 *FDA, NIH, and 15 Private Organizations Join Forces to Increase Effective Gene Therapies for Rare Diseases*, U.S. FOOD & DRUG ADMIN. (Oct. 27, 2021), https://www.fda.gov/news-events/press-announcements/fda-nih-and-15-private-organizations-join-forces-increase-effective-gene-therapies-rare-diseases.

691 *See* Gillian E. Metzger, *Foreword: 1930s Redux: The Administrative State Under Siege*, 131 HARV. L. REV. 1, 3 (2017).

692 Am. Hosp. Ass'n v. Becerra, 142 S. Ct. 1896 (2022).

693 *See, e.g.*, James Romoser, *In an Opinion That Shuns Chevron, the Court Rejects a Medicare Cut for Hospital Drugs*, SCOTUSBLOG (June 15, 2022, 2:24 P.M.), https://www.scotusblog.com/2022/06/in-an-opinion-that-shuns-chevron-the-court-rejects-a-

2023 term that asks whether *Chevron* should be overruled.[694] In 2020, the Supreme Court limited agencies' power to seek disgorgement remedies in court,[695] and in 2021, it limited agencies' ability to seek equitable money remedies.[696] Numerous courts, including the Supreme Court, have struck down COVID-19 laws aimed at securing public health, including an eviction moratorium and an employee vaccine-or-test policy.[697] In *West Virginia v EPA*,[698] the Supreme Court sliced EPA's authority under the major questions doctrine; in the words of Justice Kagan:

> Some years ago, I remarked that "[w]e're all textualists now." . . . It seems I was wrong. The current Court is textualist only when being so suits it. When that method would frustrate broader goals, special canons like the "major questions doctrine" magically appear as get-out-of-text-free cards. Today, one of those broader goals makes itself clear: Prevent agencies from doing important work, even though that is what Congress directed.[699]

But of course, FDA cannot on its own change the course of law, nor corporate and political systems. We, as a society, must take corporate power seriously and insulate premarket review from its influence. FDAPRRA offers some measures to protect FDA, but we must ask deeper questions about the genesis of corporate power in the United States. These sources may include corporate consolidation greenlit by changes in antitrust law, accumulated corporate wealth, weak campaign finance regulation, reduction in countervailing power (e.g., unions), global competition, and trends in U.S. court composition.

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medicare-cut-for-hospital-drugs. The implication is increased judicial invalidation of agency legal interpretations.

694 Loper Bright Enterprises v. Raimondo, 143 S. Ct. 2429 (2023); Josh Gerstein & Alex Guillén, *Supreme Court Move Could Spell Doom for Power of Federal Regulators*, POLITICO (May 1, 2023, 3:14 P.M. EDT), https://www.politico.com/news/2023/05/01/supreme-court-chevron-doctrine-climate-change-00094670.

695 Liu v. SEC, 140 S. Ct. 1936 (2020).

696 AMG Capital Mgmt., LLC v. FTC, 141 S. Ct. 1341 (2021).

697 Lance Gable, *Distancing, Movement and Gathering Restrictions, and Business and Activity Control Measures*, *in* COVID-19 POLICY PLAYBOOK: LEGAL RECOMMENDATIONS FOR A SAFER, MORE EQUITABLE FUTURE 33, 36 (Scott Burris et al. eds., 2d. ed., 2021) ("[A]s the pandemic stretched on, courts — including the newly reconstituted and more conservative U.S. Supreme Court — have increasingly given less deference to state orders imposing social distancing and community mitigation measures."); Alabama Ass'n of Realtors v. HHS, 141 S. Ct. 2485 (2021) (eviction moratorium); Nat'l Fed'n Indep. Bus. v. Dep't of Lab., 142 S. Ct. 661 (2022) (vaccine-or-test rule).

698 142 S. Ct. 2587 (2022).

699 *Id.* at 2641 (Kagan, J. dissenting) (citation and footnote omitted).

Much of these forces are beyond FDA's control. Greater public involvement, perhaps even a social movement, may be necessary to reverse these trends. Still, FDA can judiciously participate in these conversations instead of appearing to be a bystander.

As a final note, this Article advises caution in the creation of new premarket review regimes. No doubt, premarket review has tremendous power as a regulatory tool. However, across product areas, FDA's premarket review has been undermined and disconnected from public health, leaving, in many cases, only the illusion of regulation—which could ward off public concern and impetus for change.

V. CONCLUSION

When many people think of the paragon of regulation—an agency whose mission is so essential that it must not be disturbed—they point to FDA. It goes without saying that products intimately connected with human life, like drugs and foods, should only be allowed on the market if they are safe and appropriate for public use. However, this Article uses a birds-eye view of five FDA product areas to examine how corporate power and neoliberalism have impacted FDA's core mission. The result is a disconnection of premarket review from its original moorings in public health. Today, a large fraction of death and disease in the United States stems from products that premarket review should have caught.

This Article urges a reconnection between FDA review and public health. Statutory repairs could insulate premarket review from corporate and political influence, provide robust resources, and restore the agency's position to maximize public health. But we must also engage with the root cause of agency dysfunction: the rise of corporate power. FDA cannot fight that battle alone, but it can boldly enter the public discourse—with the spirit of honesty, not defensiveness. From Amanda Gorman:

> When day comes we step out of the shade,
> aflame and unafraid.
> The new dawn blooms as we free it.
> For there is always light,
> if only we're brave enough to see it,
> if only we're brave enough to be it.[700]

700 Lian Parsons, *'History Has Its Eyes on Us'*, HARVARD GAZETTE (Jan. 20, 2021), https://news.harvard.edu/gazette/story/2021/01/amanda-gormans-inauguration-poem-the-hill-we-climb.