Medical Algorithms Lack Compassion: How Race-Based Medicine Impacted the Rights of Incarcerated Individuals Seeking Compassionate Release During COVID-19

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ABSTRACT

In 2020, the U.S. Centers for Disease Control and Department of Justice introduced guidance that a number of underlying medical conditions—including kidney disease—increased one's risk of severe illness or death from COVID-19 enough to merit compassionate release from jail or prison. Courts reviewing compassionate release applications used a standard metric of kidney function—the estimated glomerular filtration rate ("eGFR")—to determine the severity of an individual's chronic kidney disease. Because the equations used to calculate eGFR incorporate a race-based multiplier that specifically and systematically underestimates kidney disease severity for Black patients, compassionate release decisions were influenced and, in several cases, determined on the basis of race. In this article, we articulate the pseudo-scientific origins of race-based medical algorithms and the inequitable impact they pose, particularly for minoritized patients. We address key civil rights implications that arise from the use of race-based medical algorithms that systematically disadvantage Black

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individuals. We explore legal precedents by drawing parallels with scrutiny of the use of race in other medical algorithms, including the direct impact of GFR estimation on kidney transplant eligibility, race-normed concussion protocols in the evaluation of National Football League players, and race-based pulmonary function testing in asbestos workers' compensation cases. We conclude by recommending the creation of interdisciplinary task forces and regulatory oversight to reexamine the ways in which medical algorithms produce inequitable outcomes for individuals on the basis of protected classifications like race, often without a sound scientific justification.

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INTRODUCTION

J.R. could have been released. He might have come home, if only his kidney had been assessed as that of a white man.

Instead—because of a controversial medical algorithm based on outdated assumptions about Black race—J.R. remains in prison. He stays there, knowing—as a medical expert's affidavit reported during his compassionate release hearing—that his risk of dying from COVID-19 is ten times higher than that of the average healthy American.[1]

J.R. began serving a 291-month sentence in the Federal Correctional Institution, Hazelton facility in 2007 for "participation in a drug conspiracy that began when he was only 15 years old, and his accomplice liability for two murders when he was only 1[8] years old."[2] J.R. had been abandoned by his parents and left to grow up in the streets alone.[3] J.R. became a father when he was fourteen years old. He struggled to provide for his family but "was too young to obtain a job." Out of desperation, he turned to what seemed to be the only economic option: he started selling drugs.[4] He has spent more of his life behind bars than in the outside world.

In 2020, J.R. spent what time he could staying connected with his family over the phone, celebrating their milestones from afar. He was also scared. He knew, as we know today, that COVID-19 is exponentially more deadly for people like him who have high blood pressure and untreated kidney disease.[5] In October 2020, J.R. submitted an emergency motion for compassionate release. By that time, his facility was already boasting thirty-seven active cases of COVID-19 among inmates and staff.[6]

During J.R.'s compassionate release hearing, the court deemed J.R.'s undiagnosed kidney disease as central to the decision of whether he would be released. By that time, the U.S. Centers for Disease Control had formally

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[1] Declaration of William Weber, MD, MPH at 4, United States v. Robinson, No. 04-128 (RDM), 2021 WL 1318027 (D.D.C. Apr. 8, 2021), ECF No. 1428-1.

[2] Emergency Motion for Compassionate Release Under 18 U.S.C. § 3582(c)(1)(A)(i) at 1, *Robinson*, 2021 WL 1318027, ECF No. 1404 [hereinafter Emergency Motion for Compassionate Release].

[3] Reply in Support of Emergency Motion for Compassionate Release Under 18 U.S.C. § 3582(c)(1)(A)(i) at 1, *Robinson*, 2021 WL 1318027, ECF No. 1413-1.

[4] *Id.*

[5] *See People with Certain Medical Conditions*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://perma.cc/5L6V-L7CG.

[6] Emergency Motion for Compassionate Release, *supra* note 2, at 18.

recognized chronic kidney disease ("CKD") as a pre-existing condition that increased the morbidity and mortality of COVID-19.[7] Prior precedents considered a CKD diagnosis as medically sufficient to warrant releasing incarcerated people.[8] So, if J.R. was found to have CKD, his compassionate release application may have been granted.

A person's kidney health is measured by obtaining a blood test called "creatinine," which is plugged into an equation to calculate their estimated Glomerular Filtration Rate ("eGFR"). When a person's eGFR dips below 60 for three consecutive months, they can be diagnosed with CKD.[9] J.R.'s eGFR was tested over a three-month period, resulting in *unadjusted* measurements of 56, 57, and 58. That should have been enough to land him a formal diagnosis. But, because J.R. is Black, a controversial race multiplier—which inflates a Black person's eGFR measurements by 21%—was applied to his lab results.[10] This elevated his eGFR values over 60. Based on these racially modified results, the Federal Bureau of Prisons ("BOP") nurse contended that J.R. was only "on the cusp of kidney disease but could not be formally diagnosed."[11] The court's ultimate decision was based in part on this BOP nurse's race-based determination of J.R.'s kidney health—and, with no formal CKD diagnosis, J.R.'s application for compassionate release was rejected.[12]

J.R.'s legal team argued on appeal that if the race-based multiplier had not been applied—that is, if J.R. had been treated as a non-Black person would have been—his medical data would have supported a formal diagnosis of CKD, establishing a clear rationale for compassionate release.[13] It did not matter. The

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[7] Corrected Memorandum of Law and Fact in Support of Appellant at 12, United States v. Robinson, 853 F. App'x 681 (Mem) (D.C. Cir. 2021) (No. 21-3026), ECF No. 1900551 [hereinafter Brief of Defendant-Appellant].

[8] *See, e.g.*, United States v. Johnson, No. 4:16-577-BHH-1, 2020 WL 4501513, at *5 (D.S.C. Aug. 5, 2020) (granting motion for compassionate release for inmate suffering from Stage 2 CKD and hypertension and finding that "chronic kidney disease of any stage" is a "serious medical condition.") Note that without the race-based multiplier, J.R.'s CKD would qualify as Stage 3. Brief of Defendant-Appellant, *supra* note 7, at 18.

[9] Andrew S. Levey et al., *The Definition, Classification, and Prognosis of Chronic Kidney Disease: A KDIGO Controversies Conference Report*, 80 KIDNEY INT'L 17, 17 (2011).

[10] Brief of Defendant-Appellant, *supra* note 7, at 9; *see also* Nwamaka Denise Eneanya et al., *Health Inequities and the Inappropriate Use of Race in Nephrology*, 18 NATURE REVS. NEPHROLOGY 84, 87 (2022) (discussing race-based eGFR multipliers).

[11] Brief of Defendant-Appellant, *supra* note 7, at 9.

[12] United States v. Robinson, No. 04-128 (RDM), 2021 WL 1318027, at *12 (D.D.C. Apr. 8, 2021).

[13] Brief of Defendant-Appellant, supra note 7, at 18.

Appeals Court found no "abuse of discretion" in the way the District Court analyzed J.R.'s "medical reasons for release"—including the disputed use of the race-based adjustment—and rejected J.R.'s appeal.[14]

J.R.'s story demonstrates the potentially far-reaching impacts of racialized medical algorithms on the rights of incarcerated individuals. This article exposes the discriminatory origins of race-based medical algorithms and the empiric harm they pose to Black individuals. It describes the decisional role that race-based medical algorithms can play by determining who can obtain medical care, organ transplantation, and compassionate release. Furthermore, we explore civil rights and anti-discrimination statutes that may be used to challenge medical and governmental institutions that readily employ inequitable race-based algorithms. We draw parallels with other examples of race-based clinical decision algorithms currently in use, some of which have been addressed in workers' compensation and physical injury lawsuits, to demonstrate that such discrimination manifests in a wide range of legal contexts. And, in concluding, we recommend interdisciplinary task forces and policy intervention to reexamine the ways in which medical algorithms may produce inequitable outcomes on the basis of race and other protected classifications without a sound scientific justification.

I. RACE-BASED MEDICINE: THE (MIS)USE OF RACE IN DIAGNOSIS AND TREATMENT

A. Pseudoscientific Origins of the eGFR Race Multiplier

In this section, we explain the origins of the estimated glomerular filtration rate ("eGFR")—a laboratory formula used to assess kidney function. We explore the initial justifications for its racialization, recent developments in the adoption of race-free alternatives across the country, and the individual and population-level impacts of race-adjusted eGFR calculation.

First, a brief primer on kidney function and disease, related diagnostic criteria, and the calculation of eGFR is necessary.

The kidney is an organ tasked with filtering out waste and excess fluid in the body. The kidney regulates the level of byproducts, acid buildup, and blood pressure in the body. A patient's level of kidney health and disease is based on the measurement of the Glomerular Filtration Rate ("GFR")—the total filtration

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[14] United States v. Robinson, 853 F. App'x 681 (Mem) (D.C. Cir. 2021).

rate for all functioning nephrons in the kidney. A person with healthy kidneys usually has a GFR level between 120 and 130 mL/min/1.73 m^2, and a lower GFR score indicates a lower level of kidney function.[15]

According to the U.S. Centers for Disease Control, chronic kidney disease is the ninth-leading cause of death nationwide, impacting an estimated 37 million U.S. adults, the majority of whom are undiagnosed.[16] The disease is defined by the National Kidney Foundation as "abnormalities of kidney structure or function, present for >3 months, with implications for health,"[17] and it is commonly diagnosed based on repeatedly low laboratory-estimated GFR. Massive racial disparities exist across the CKD care continuum.[18] Notably, Black individuals face two to four times greater age-adjusted risk of progression to end-stage kidney disease, higher rates of premature mortality, lower likelihood of receiving kidney transplantation, and more—all of which are driven and exacerbated by structural racism.[19]

Although GFR can be directly assessed by collecting a patient's 24-hour urine sample, direct assessment remains a cumbersome, specialized, and very expensive diagnostic test with limited availability outside of major medical centers. In routine practice, GFR is estimated from the blood concentration of serum creatinine, a normal byproduct of muscle breakdown that is near-completely removed from the blood via kidney filtration.[20]

The two most common equations used to estimate kidney function from creatinine were derived from the Chronic Kidney Disease Epidemiology ("CKD-EPI") and the Modification of Diet in Renal Disease ("MDRD") studies.[21] In their

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[15] *See* Andrew S. Levey et al., *National Kidney Foundation Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification*, 139 ANNALS INTERNAL MED. 137, 139 (2003).

[16] *Chronic Kidney Disease Basics*, CTRS. FOR DISEASE CONTROL & PREVENTION https://perma.cc/7C8G-CFF7.

[17] *What Is the Criteria for CKD*, NAT'L KIDNEY FOUND., https://perma.cc/P74D-QUXH.

[18] *See generally* Keith Norris & Allen R. Nissenson, *Race, Gender, and Socioeconomic Disparities in CKD in the United States*, 19 J. AM. SOC'Y NEPHROLOGY 1261 (2008).

[19] *See* Dinushika Mohottige et al., *Racism and Kidney Health: Turning Equity into a Reality*, 77 AM. J. KIDNEY DISEASES 951, 951 (2021); Eneanya et al., *supra* note 10, at 84.

[20] *See* NOOR CHADHA ET AL., *Kidney Disease and Glomerular Filtration Rates*, *in* TOWARDS THE ABOLITION OF BIOLOGICAL RACE IN MEDICINE AND PUBLIC HEALTH: TRANSFORMING CLINICAL EDUCATION, RESEARCH, AND PRACTICE 24, 24 (2020).

[21] *See* Eneanya et al., *supra* note 10, at 87; *see also* Andrew S. Levey et al., *A More Accurate Method to Estimate Glomerular Filtration Rate from Serum Creatinine: A New Prediction Equation*, 130 ANNALS INTERNAL MED. 461 (1999) [hereinafter Levey et al., *A More Accurate Method*]; Andrew S. Levey et al., *A New Equation to Estimate Glomerular Filtration Rate*, 150 ANNALS INTERNAL MED. 604 (2009) [hereinafter Levey et al., *A New Equation*].

original forms, both equations incorporate a race multiplier that artificially inflates the eGFR estimate for Black patients (1.16 and 1.21 for the CKD-EPI and MDRD equations, respectively).[22] Therefore, a Black person with the same age, weight, and serum creatinine level as a white person would have a higher (i.e., less severe) *reported* eGFR. This artificial inflation of eGFR results in Black patients being systematically diagnosed with less advanced kidney disease, delaying the initiation of necessary interventions.[23] Notably, no other racial or ethnic groups are included in these equations, nor are multiracial individuals included: the only racial options available are "Black" and "[w]hite or other."[24]

The foundational logic and supporting evidence for the use of race-based eGFR scoring are spurious. The authors of the 1999 MDRD study, which originated the use of the eGFR race correction, justified the inclusion of race because "Black ethnicity was an independent predictor of higher GFR" and "previous studies have shown that on average, [B]lack persons have greater muscle mass than white persons."[25] This conclusion was drawn from three problematic and outdated research studies, each with clear inferential flaws based on long-disproven conceptualizations of race as a marker of biologically intrinsic traits, non-representative population sampling, and overinterpretation of biological proxy measures without clearly established causal mechanisms, as

[22] Eneanya et al., *supra* note 10, at 87.

[23] Nwamaka Denise Eneanya et al., *Reconsidering the Consequences of Using Race to Estimate Kidney Function*, 322 JAMA NETWORK 113, 113-14 (2019).

[24] Levey et al., *A New Equation*, *supra* note 21, at 607. *See also* Levey et. al, *A More Accurate Method*, *supra* note 21, at 469 tbl. 4 (listing only "Black" and "[w]hite" as options for a subject's "[e]thnicity").

[25] *See* Levey et al., *A More Accurate Method*, *supra* note 21, at 464.

elaborated in the notes.[26, 27, 28] Moreover, the notion that Black-white differences in GFR are due to differential muscle mass or nutritional status has itself since been explicitly debunked. The studies cited by Levey et al. in 1999 made harmful mistakes that are widely critiqued in scientific literature from prominent medical journals such as the *New England Journal of Medicine* and *The Lancet*, as well as in expert policy statements from leading national groups such as the American Medical Association and the American Association of Biological Anthropologists.[29]

Despite all of the clear and longstanding arguments against racializing kidney disease estimation, eGFR calculations have included a race multiplier that inflates measurements for Black individuals for more than two decades. The original justification for this multiplier lies in racial essentialism—the notion

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[26] Harsha, Frerichs, & Berenson (1978) studied 143 white and 99 Black children in one town in Louisiana. The authors concluded that Black children have less body fat than white children according to densitometric and anthropometric analysis. The study notes that "systematic anthropometric differences between the races have long been recognized" and that their "findings corroborate the view that the races differ somatically." David W. Harsha et al., *Densitometry and Anthropometry of Black and White Children,* 50 HUM. BIOLOGY 261, 276, 278 (1978). Yet, racialized anthropometry—a field that seeks to link human physical characteristics and measurements to racial or psychological traits—is currently considered a pseudoscientific approach.

[27] Cohn et al. (1977) studied a non-representative convenience sample of forty-seven Black adults (all either laboratory staff or their friends and families) in one town in New York. Using potassium as a purported surrogate maker for lean muscle, the study authors concluded that Black men and women have higher muscle mass than whites. *See* S.H. Cohn et al., *Body Elemental Composition: Comparison Between Black and White Adults,* 232 AM. J. PHYSIOLOGY E419, E419-22 (1977).

[28] Worrall et al. (1990) studied thirty white and thirty Black adults in a London hospital-based study that focused on serum creatinine kinase (not serum creatinine) to determine muscle mass. The authors noted that Black overexpression of serum creatine kinase was unrelated to their lean body mass (muscle) and must be related to something else. That "something else" was suggested, in at least two Black subjects, to be "mild depressive illness" and "learned illness behavior in an under-achiever with academically successful siblings." For the other Black subjects in the study, this increased serum creatine kinase was posited to be related to increased "muscle permeability" or differences in "renal clearance" among Black people. *See* J.G. Worrall et al., *Racial Variation in Serum Creatine Kinase Unrelated to Lean Body Mass,* 29 RHEUMATOLOGY 371, 371-73 (1990).

[29] *See* Darshali A. Vyas, et al., *Hidden in Plain Sight—Reconsidering the Use of Race Correction in Clinical Algorithms,* 383 NEW ENG. J. MED. 874, 874-82 (2020); Jessica P. Cerdeña et al., *From Race-Based to Race-Conscious Medicine: How Anti-Racist Uprisings Call Us to Act,* 396 LANCET 1125, 1125-28 (2020); Press Release, Am. Med. Ass'n, New AMA Policies Recognize Race as a Social, Not Biological, Construct (Nov. 16, 2020), https://perma.cc/QQ5V-452H; Agustín Fuentes et al., *AAPA Statement on Race and Racism*, 169 AM. J. PHYSICAL ANTHROPOLOGY 400 (2019); *see also* Rohan Khazanchi et al., *Beyond Declarative Agency: Moving Organized Medicine and Policy Makers from Position Statements to Anti-Racist Praxis,* HEALTH AFFS. FOREFRONT (Feb. 25, 2021), https://perma.cc/Q29E-Z46D.

that individuals of a racial group have shared biological characteristics that delineate them from other racial categories. This is fundamentally untrue: race is not a biologic variable, nor is it a meaningful proxy for genetic alleles or family history,[30] though the medical field has persistently misused race as a substitute for both.[31] There are, for example, greater genetic differences within racial categories than between races.[32]

Race is a dynamic and socially-defined category, and its distinctions are time and location-specific. Thus, using it as a simple physiologic category violates technical definitions of race and flattens a complex construct. Such conceptualizations are nonspecific and meaningless at best, and they are systematically harmful at worst.[33] Substantial existing scholarship provides scientific critique of race-based medicine and documents how race-based coefficients support the reification of false and harmful notions of biological essentialism.[34]

As a result of increasing advocacy efforts, a wide array of diverse institutions including Beth Israel Deaconess Medical Center, Massachusetts General Hospital, Brigham and Women's Hospital, UW Health and University of Wisconsin School of Medicine and Public Health, University of Washington, Vanderbilt University Medical Center, Zuckerberg San Francisco General Hospital, University of Minnesota, Hennepin County Medical Center, University of Pennsylvania, University of Maryland, Duke University, University of Nebraska Medical Center, a coalition of twelve health systems in New York City led by the city health department, and many more have publicly announced their elimination of race-based eGFR calculations in lieu of race-free alternatives.[35]

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[30] Lynn B. Jorde & Stephen P. Wooding, *Genetic Variation, Classification and 'Race',* 36 NATURE GENETICS S28 (2004).

[31] Sarah A. Tishkoff & Kenneth Kidd, *Implications of Biogeography of Human Populations for 'Race' and Medicine,* 36 NATURE GENETICS S21, S21 (2004).

[32] Michael Yudell et al., *Taking Race out of Human Genetics,* 351 SCIENCE 564, 564-65 (2016).

[33] *See generally* Fuentes et al., *supra* note 29.

[34] *see generally* LUNDY BRAUN, BREATHING RACE INTO THE MACHINE: THE SURPRISING CAREER OF THE SPIROMETER FROM PLANTATION TO GENETICS (2014); *see also* Cerdeña et al., *supra* note 29; Jennifer Tsai et al., *There Is No 'African American Physiology': The Fallacy of Racial Essentialism,* 288 J. INTERNAL MED. 368, 368-70 (2020).

[35] *See* Mitchel L. Zoler, *Dropping Race-Based eGFR Adjustment Gains Traction in US,* MEDSCAPE (July 6, 2020), https://perma.cc/T6NW-VF2R; *Abolish Race-Based Medicine in Kidney Disease*

In 2021, a novel and race-free refit of the CKD-EPI equation was published in the *New England Journal of Medicine* with strong evidence of improvements in diagnostic precision, accuracy, and equitability.[36] Indeed, a joint task force to re-evaluate the use of race in eGFR, led by the National Kidney Foundation (NKF) and American Society of Nephrology (ASN), quickly followed by indicating in their final recommendations that "the new . . . equation that estimates kidney function [be adopted] without a race variable. "[37] These new guidelines have formally established that the racialized adjustment of eGFR calculations is against the current standard of medical practice.

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and Beyond, S.F. EXAMINER (Nov. 27, 2019), https://perma.cc/L9LR-9ZJF; *Kidney Disease, Race, and Ethnicity,* UNIV. OF NEB. MED. CTR., https://perma.cc/V7MM-BW5H; Tim Pittman, *Duke Clinicians, Students Challenge Racial Bias of Creatinine Clearance Measure,* DUKE HEALTH (May 18, 2021), https://perma.cc/E2SP-DDEV; Arjang Djamali, *UW Health, School of Medicine and Public Health Remove Race from Kidney Function Estimation Formula,* UNIV. OF WIS. MADISON SCH. OF MED. & PUB. HEALTH, https://perma.cc/3PAB-LGF3; *Eliminating Race as a Variable in Estimating Kidney Function*, DISCOVER (July 29, 2020), https://perma.cc/U9Z6-MMRZ; Caroline Watson, *Abolish Race-Based Medicine,* HIVE NEWS & EVENTS (Mar. 18, 2020), https://perma.cc/A4V8-SYXQ; *Reevaluating Race in Medicine,* HEALTH FAIRVIEW (Mar. 9, 2021), https://perma.cc/9M6N-XUMM; Louis H. Hart III, *Medical Eracism: Abolishing Race-Based Medicine,* N.Y.C. HEALTH & HOSPITALS (Feb. 2021), https://perma.cc/B74S-AW4U; Hennepin Kidney (@HennepinKidney), TWITTER (Apr. 6, 2021, 7:24 AM), https://perma.cc/HC6Z-7DYM; Demetrius Dillard, *UMMS, UM School of Medicine to Eliminate Race-Based Kidney Function Estimates,* WEAA (Dec. 20, 2021), https://perma.cc/XJY8-89GW; Rosemary Misdary, *NYC Medical Coalition Pledges to Remove Racially Biased Algorithms from Patient Treatment Options,* GOTHAMIST (Dec. 7, 2021), https://perma.cc/X88T-HMCT.

[36] *See* Press Release, Nat'l Inst. of Health, NIH-Supported Study Suggests Alternative to Race-Based Kidney Function Calculations (Sept. 23, 2021), https://perma.cc/Q3GG-XABK; *NKF and ASN Release New Way to Diagnose Kidney Diseases*, NAT'L KIDNEY FOUND. (Sept. 23, 2021), https://perma.cc/Q5LG-Z5LU; Lesley A. Inker et al., *New Creatinine- and Cystatin C-Based Equations to Estimate GFR Without Race*, 385 NEW ENG. J. MED. 1737 (2021); Winfred Williams et al., *Time to Eliminate Health Care Disparities in the Estimation of Kidney Function*, 385 NEW ENG. J. MED. 1804 (2021); Chi-yuan Hsu et al., *Race, Genetic Ancestry, and Estimating Kidney Function in CKD*, 385 NEW ENG. J. MED. 1750 (2021); Cynthia Delgado et al., *A Unifying Approach for GFR Estimation: Recommendations of the NKF-ASN Task Force on Reassessing the Inclusion of Race in Diagnosing Kidney Disease*, 79 AM. J. KIDNEY DISEASES 268 (2022); *Backed by Penn Medicine Research, National Task Force Recommends Removing Race from Kidney Function Equation*, PENN MED. NEWS (Sept. 23, 2021), https://perma.cc/HE5L-XX7M. A growing number of institutions have retired the use of race-based eGFR and adopted new guidelines published in November 2021 and recommended by the American Society of Nephrology and the National Kidney Foundation in February 2022. The new, race-free CKD-EPI equation is more accurate and precise than race-based eGFR estimation, without relying on problematic race-based and pseudoscientific assumptions. For examples of recent press releases from institutions which have implemented race-free methods for eGFR estimation, see sources cited *supra* note 35.

[37] Cynthia Delgado et al., *A Unifying Approach for GFR Estimation: Recommendations of the NKF-ASN Task Force on Reassessing the Inclusion of Race in Diagnosing Kidney Disease*, 79 AM. J. KIDNEY DISEASE 268, 288 (2022); *see also NKF and ASN Release New Way to Diagnose Kidney Diseases*, NAT'L KIDNEY FOUND. (Sept. 23, 2021), https://perma.cc/Q5LG-Z5LU.

B. Inequitable Population-Level Impacts of Race-Adjusted eGFR

Despite the aforementioned scientific critiques of biologizing race in the eGFR equation, race-adjusted eGFR has remained the clinical standard of care since the MDRD was introduced in 1999 until introduction of the race-free 2021 CKD-EPI equation. Because eGFR cut-offs are used to support clinical decision-making, racialized diagnostic testing exacerbates disparities across the kidney care continuum.

As previously noted, the diagnosis and staging of CKD are most commonly established using eGFR.[38] Using eGFR, kidney function is categorized into five stages, Stage 1 being normal kidney function and Stage 5 requiring dialysis or transplant for survival. Institutions and healthcare providers usually use Stage 3 (eGFR less than 60) as the threshold for a diagnosis of CKD.[39] Analyses of nationally representative health data demonstrate that the elimination of the 1999 MDRD race adjustment would result in an estimated 3.3 million more Black Americans reaching a diagnostic threshold for CKD Stage 3,[40] and the elimination of the 2009 CKD-EPI race modifier would reclassify over 980,000 Black individuals as CKD Stage 3.[41] Early diagnosis of CKD allows for rapid referral to specialist clinicians and insurance coverage for patient education and nutrition services, all of which slow CKD progression and reduce mortality rates.[42] Removal of race from the 2009 CKD-EPI equation would make an estimated 45,000 Black individuals eligible for Medicare coverage of CKD

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[38] *See Stages of Chronic Kidney Disease (CKD)*, AM. KIDNEY FUND (last updated Sept. 15, 2021), https://perma.cc/LNK8-H5DP.

[39] *See* United States v. Robinson, No. 04-128 (RDM), 2021 WL 1318027, at *8-10 (D.D.C. Apr. 8, 2021).

[40] Jennifer W. Tsai et al., *Evaluating the Impact and Rationale of Race-Specific Estimations of Kidney Function: Estimations from U.S. NHANES, 2015-2018*, 42 ECLINICALMEDICINE (Online) at 3 (Dec. 2021), https://perma.cc/4MGX-F85F.

[41] Jennifer Bragg-Gresham et al., *Prevalence of Chronic Kidney Disease Among Black Individuals in the US After Removal of the Black Race Coefficient from a Glomerular Filtration Rate Estimating Equation*, JAMA NETWORK OPEN (Online) at 2 (Jan. 29, 2021), https://perma.cc/5QQT-ACK2.

[42] *See* Neil A. Smart, et al., *Early Referral to Specialist Nephrology Services for Preventing the Progression to End-Stage Kidney Disease*, COCHRANE DATABASE SYST. REVS. (Online) (June 18, 2014), https://perma.cc/RVU7-8JBV; Neil A. Smart, et al., *Outcomes of Early Versus Late Nephrology Referral in Chronic Kidney Disease: A Systematic Review*, 124 AM. J. MED. 1073 (2011); *Medical Nutrition Therapy Benefit for Diabetes & ESR*, CTRS. FOR MEDICARE & MEDICAID SERVS., https://perma.cc/VG7D-86AH; Yelena Slinin et al., *Prehemodialysis Care by Dietitians and First-Year Mortality After Initiation of Hemodialysis*, 58 AM. J. KIDNEY DISEASES 583, 583-90 (2011); Andrew Narva, et al., *Educating Patients About CKD: The Path to Self-Management and Patient-Centered Care*, 11 CLIN. J. AM. SOC'Y NEPHROLOGY 694, 694-703 (2016).

education, 60,000 for nephrology specialist referral, and 130,000 for medical nutrition coverage.[43]

GFR estimation also impacts the care of patients with end-stage kidney disease. For patients with CKD Stage 5, diagnosed based on eGFR < 15, treatment options are essentially limited to dialysis and kidney transplantation.[44] Vast disparities in kidney transplantation are persistent and pervasive across three main domains: access to care (including diagnosis, referral for transplant evaluation, and wait listing), allocation of scarce kidney organs, and post-transplant outcomes.[45] Black people wait twice as long for kidney transplants and are more than three times as likely to develop end-stage renal disease as compared to white people.[46]

Once again, removal of race can help redress several inequities along these lines. Removal of race from the 2009 CKD-EPI equation would, on average, result in Black patients being referred to nephrology specialists 3.6 years earlier and listed for guideline-based transplantation referral 1.9 years earlier.[47] Similarly, the removal of race from the 1999 MDRD equation would help 31,000 Black patients become eligible for kidney transplant evaluation and waitlist inclusion.[48] The real-world implications of removing race from eGFR estimation would be striking: at one major health system in Boston, removing race from the 2009 CKD-EPI would reassign 64 of 2,069 patients (3.1%) from eGFR > 20 to eGFR ≤ 20, thereby meeting prioritization criteria for kidney transplant, but instead, zero of these patients were listed for transplant.[49]

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[43] *See* James Diao et al., *Clinical Implications of Removing Race from Estimates of Kidney Function*, 325 JAMA 184, 184-86 (2021).

[44] *Stages of Chronic Kidney Disease (CKD)*, *supra* note 38.

[45] *See* Winfred W. Williams & Francis L. Delmonico, *The End of Racial Disparities in Kidney Transplantation? Not So Fast!*, 27 J. AM. SOC'Y NEPHROLOGY 2224, 2224-26 (2016); Elaine Ku et al., *Racial and Ethnic Disparities in Kidney Transplant Access Within a Theoretical Context of Medical Eligibility*, 104 TRANSPLANTATION 1437, 1437-44 (2020); Sayeed K. Malek et al., *Racial and Ethnic Disparities in Kidney Transplantation*, 24 TRANSPLANT INT'L 419, 419-24 (2011).

[46] *See Chronic Kidney Disease in the United States, 2021*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://perma.cc/GS2R-6NYB; Malek et al., *supra* note 45.

[47] *See* Leila Zelnick et al., *Association of the Estimated Glomerular Filtration Rate With vs Without a Coefficient for Race With Time to Eligibility for Kidney Transplant*, 4 JAMA NETWORK OPEN (Online) at 8 (Jan. 14, 2021), https://perma.cc/HL2J-TVL9.

[48] *See id.*

[49] *See* Salman Ahmed, *Examining the Potential Impact of Race Multiplier Utilization in Estimated Glomerular Filtration Rate Calculation on African-American Care Outcomes*, 26 J. GEN. INTERNAL MED. 464, 464-71 (2021).

II. THE IMPACT OF THE eGFR RACE MULTIPLIER ON COMPASSIONATE RELEASE FOR BLACK INCARCERATED INDIVIDUALS

In this section, we establish the interplay between CKD diagnosis, COVID-19, and compassionate release decisions. We point to harms resulting from the eGFR use in clinical settings—such as delay in qualifying patients for a nephrology referral, eligibility for kidney transplant evaluation, and inclusion on transplant waitlists—and relate them to manifestations of harm within the context of the criminal-legal system. Specifically, we detail cases where courts denied compassionate release based on a race-multiplied eGFR measurement to the detriment of Black incarcerated individuals. Lastly, to frame ensuing discussion about the misuse of race, we review key clinical considerations and guideline updates for the diagnosis of CKD.

A. Compassionate Release in the COVID-19 Era

1. Federal Compassionate Release Statute

From its enactment in 1984 until 2018, the Federal statute allowing for sentence modification and the compassionate release of incarcerated individuals under 18 U.S.C. § 3582(c)(1)(A) enabled only the Director of the Bureau of Prisons to request that the court reduce a defendant's sentence. Under that statutory regime, the ability of an incarcerated defendant (hereinafter, "defendant" or "incarcerated individual") [50] to apply for compassionate release was "wholly dependent upon the Director of the BOP" and the process was infrequently used.[51] To illustrate, between 1984 and 2013, the Director of the BOP used the process to release an average of just 24 inmates per year.[52] This changed with the enactment of the First Step Act in 2018, which, among other criminal justice reforms, amended 18 U.S.C.

[50] The authors will exercise discretion to refer to incarcerated defendants as an "incarcerated individual" or "defendant," and to avoid the use of terms "prisoners" or "inmates" throughout this Article. As such, where the terms "prisoners" or "inmates" appear in legal and statutory texts, the authors will replace the term in brackets with the preferred terms "defendant" or "incarcerated individual" insofar as the context will allow.

[51] United States v. McGee, 992 F.3d 1035, 1041 (10th Cir. 2021).

[52] *Id.*

§ 3582(c)(1)(A) to allow defendants themselves to seek compassionate release.[53]

In reviewing compassionate release applications, courts use a "three-step test" as instructed by the Federal statute.[54] First, a "court must find whether extraordinary and compelling reasons warrant a sentence reduction." Second, a "court must find whether such reduction is consistent with applicable policy statements issued by the Sentencing Commission." Third, a court will "consider any applicable [18 U.S.C.] § 3553(a) factors[55] and determine whether, in its discretion, the reduction authorized by steps one and two is warranted in whole or in part under the particular circumstances of the case."[56] According to the Sentencing Commissions' policy statement, a defendant may establish "extraordinary and compelling" circumstances to warrant a sentence reduction and/or compassionate release by showing that he or she is suffering from a "serious physical or medical condition" that "diminishes the ability of the defendant to provide self-care within the environment of a correctional facility."[57]

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[53] First Step Act of 2018, Pub. L. No. 115-391, § 603(b), 132 Stat. 5194, 5239-41 (2018) (amending 18 U.S.C. § 3582(c)(1)(A)).

[54] *McGee*, 992 F.3d at 1043; *see also* United States v. Maumau, 993 F.3d 821, 831 (10th Cir. 2021).

[55] Section 3553(a) requires the Court to consider: "(1) 'the nature and circumstances of the offense and the history and characteristics of the defendant;' (2) the need for the sentence to reflect the seriousness of the offense, promote respect for the law, provide just punishment, and provide rehabilitative opportunities and care to the defendant; (3) the kinds of sentences available; (4) the sentencing range as set by the USSG; (5) any pertinent policy by the United States Sentencing Commission; (6) the need to avoid unwarranted sentencing disparities among similarly situated defendants; and (7) the need for restitution to any victims." United States v. Jones, No. 09-CR-83-CJW-MAR, 2020 WL 4193269, at *4 (N.D. Iowa July 21, 2020).

[56] United States v. Hald, 8 F.4th 932, 938 (10th Cir. 2021), *cert. denied* 142 S. Ct. 2742 (2022).

[57] U.S. SENT'G GUIDELINES MANUAL § 1B1.13 cmt. 1(A)(i)-(ii) (U.S. SENT'G COMM'N 2021). In full, medical conditions qualify as "extraordinary and compelling reasons" when:

> (i) The defendant is suffering from a terminal illness (*i.e.*, a serious and advanced illness with an end of life trajectory). A specific prognosis of life expectancy (*i.e.*, a probability of death within a specific time period) is not required. Examples include metastatic solid-tumor cancer, amyotrophic lateral sclerosis (ALS), end-stage organ disease, and advanced dementia).
>
> [or] (ii) The defendant is—(I) suffering from a serious physical or medical condition, (II) suffering from a serious functional or cognitive impairment, or (III) experiencing deteriorating physical or mental health because of the aging process, that substantially diminishes the ability of the defendant to provide self-care within the environment of a correctional facility and from which he or she is not expected to recover.

Id.

2. COVID-19: Extraordinary and Compelling Reasons for Compassionate Release

Incarcerated populations have long faced suboptimal medical care and resulting health inequities,[58] but the COVID-19 pandemic introduced sudden and unprecedented health risks to prison facilities.[59] Courts and public health researchers alike took note that prisons were particularly conducive to the spread of COVID-19, citing the predicament of crowded prisons, paucity of adequate personal protective equipment (PPE), and lack of access to high-quality medical care.[60] In one case, an incarcerated individual articulated some of the unique risks present at a federal BOP facility as follows:

> "(1) in order to receive your medication in the morning and afternoon you have to go to medical health services [and at] all times 20 to 30 inmates waiting [sic] to get their daily medication;" "(2) BOP has refused to provide inmate[s] hand sanitizer;" "(3) if you purchase commissary you are locked in a very small room with 25 to 30 inmate with no supervisor to enforce wearing the mask [sic];" "(4) when using the phone you are required to be in the same area 4 at a time 1 feet [sic] apart;" and (5) 20 to 30 people "jammed together to watch games."[61]

Overcrowding, congregate environments, and limited hygiene accelerate transmission of communicable disease.[62] In 2020, rates of COVID-19 infections

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[58] Lisa Puglisi & Emily Wang, *Health Care for People Who Are Incarcerated*, NATURE REVS. DISEASE PRIMERS (Online) at 1-2 (July 8, 2021), https://perma.cc/MNP6-M4TX.

[59] Katie Park, Keri Blakinger & Claudia Lauer, *A Half-Million People Got COVID-19 in Prison. Are Officials Ready for the Next Pandemic?*, MARSHALL PROJECT (June 30, 2021), https://perma.cc/U9UL-7N8K.

[60] *See* Eric Reinhart & Daniel L. Chen, *Incarceration and Its Disseminations: COVID-19 Pandemic Lessons from Chicago's Cook County Jail*, 39 HEALTH AFFS. 1412 (2020); Eric Reinhart & Daniel L. Chen, *Carceral-Community Epidemiology, Structural Racism, and COVID-19 Disparities*, 118 PNAS (Online) at 1 (May 10, 2021), https://perma.cc/ZTE7-N93P; Abigail Leibowitz et al., *Association Between Prison Crowding and COVID-19 Incidence Rates in Massachusetts Prisons, April 2020-January 2021*, 181 JAMA INTERNAL MED. 1315, 1315-1321 (2021).

[61] United States v. Owens, 2020 WL 6162783, at *5 (S.D. W. Va. Oct. 21, 2020); *see* Wise v. United States, 2020 WL 2614816, at *7 (D. Md. May 22, 2020) ("Social distancing is particularly difficult in the penal setting."); United States v. El-Hanafi, 450 F. Supp. 3d 502, 508 (S.D.N.Y. 2020) (finding "Defendant has no ability to avoid contact with infected people or areas" due to crowding and shared spaces).

[62] "Incarcerated/detained persons live, work, eat, study, and recreate within congregate environments, heightening the potential for COVID-19 to spread once introduced." CTRS. FOR DISEASE CONTROL & PREVENTION, INTERIM GUIDANCE ON MANAGEMENT OF CORONAVIRUS DISEASE 2019 (COVID-19) IN CORRECTIONAL AND DETENTION FACILITIES 2 (2020).

in the Bureau of Prisons were noted to be almost six times higher than the national average.[63] One study estimated that, at one time, the Cook County Jail alone was associated with 15.7 percent of all documented COVID-19 cases in the state of Illinois.[64] Even further, the age-adjusted COVID mortality rate among prisoner populations has been three times higher than that of the overall U.S. population,[65] representing a rapidly worsening and arguably unconstitutional offense to public health.[66] These "extraordinary and compelling circumstances" prompted courts to nominally "revisit the sentence[s] it imposed" through the process of compassionate release.[67]

Subsequently, after the Department of Justice acknowledged in a 2020 memo that "for some eligible [incarcerated individuals], home confinement might be more effective in protecting their health [against COVID-19],"[68] courts began finding that "any inmate who suffers from the chronic conditions associated with severe illness from COVID-19 should be considered as having an 'extraordinary and compelling reason' warranting reduction" of their sentence.[69] As a result, the volume of compassionate release applications

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[63] United States v. Lockhart, No. 11 CR 231 (SJ), 2020 WL 4333010, at *2 (E.D.N.Y. July 29, 2020).

[64] Reinhart & Chen, *Incarceration and Its Disseminations*, *supra* note 60, at 1412.

[65] *COVID-19 and the US Criminal Justice System: Evidence for Public Health Measures to Reduce Risk*, JOHNS HOPKINS BLOOMBERG SCH. OF PUB. HEALTH (Oct. 15, 2020), https://perma.cc/5LRP-Z4FV; Brendan Saloner et al., *COVID-19 Cases and Deaths in Federal and State Prisons*, 324 JAMA 602, 602-03 (2020); Neal Marquez et al., *COVID-19 Incidence and Mortality in Federal and State Prisons Compared With the US Population, April 5, 2020, to April 3, 2021*, 326 JAMA 1865, 1865-67 (2021).

[66] *See* Estelle v. Gamble, 429 U.S. 97, 97 (1976); Marin G. Olson et al., *Aligning Correctional Health Standards with Medicaid-Covered Benefits*, 1 JAMA HEALTH FORUM (Online) at 1-3 (July 27, 2020), https://perma.cc/86SR-GVMS.

[67] United States v. Johnson, 2020 WL 6063733, at *5 (D. Md. Oct. 14, 2020).

[68] Memorandum from the Attorney General, U.S. Dept. of Just., to the Director of Bureau Prisons, Prioritization of Home Confinement As Appropriate in Response to COVID-19 Pandemic (Mar. 26, 2020), https://perma.cc/KC42-2XFV [hereinafter DOJ Memo].

[69] United States v. Fischer, No. CR ELH-14-0595, 2020 WL 2769986, at *5 (D. Md. May 27, 2020); *see also* United States v. Moon, No. CR 0:17-01151-MGL-1, 2020 WL 3958266, at *2 (D.S.C. July 13, 2020) ("The Court concurs with the Department of Justice's position [that] an inmate 'with a medical condition that the Center for Disease Control (CDC) has identified as a risk factor for COVID-19, and from which the inmate is not expected to recover,' qualifies under the definition for extraordinary and compelling circumstances during this pandemic.") (modifications omitted); United States v. Johnson, 2020 WL 4501513, at *3 (D.S.C. Aug. 5, 2020) ("The Court is advised that the Department of Justice has taken the position that an inmate having one of the medical conditions identified by the CDC as placing an individual at increased risk for serious injury or death from COVID-19 constitutes an 'extraordinary and compelling reason' under USSG § 1B1.13 comment.").

skyrocketed during the pandemic from April 2020 to April 2021.[70] Confronted with a rapidly-rising number of compassionate release applications, judges sought expertise from the U.S. Centers for Disease Control and Prevention to guide their decisions.

As early as March 2020, the CDC had identified and catalogued a number of underlying medical conditions—such as parenchymal lung disease, structural heart conditions, and chronic kidney disease—that confer significantly higher risks of severe illness or death from COVID-19,[71] information that was quickly adopted as guidance by courts.[72] Although such information helped facilitate appraisal of compassionate release judgments, the CDC and DOJ did not provide specific metrics or offer explicit guidelines for clinical assessment.

The courts openly expressed vexation regarding the continuously evolving character of risks surrounding re-infection, natural immunity, and vaccination. One district court articulated the challenge quite bluntly:

> This court is acutely aware that no one completely understands how the coronavirus operates. Evidence suggests that COVID-19 antibodies decline over time. Some experts, however, have indicated that individuals infected with COVID-19 are likely to remain immune even after their antibody count drops. . . . This court is in no position to make a definitive determination about immunity. But, in any evaluation of whether there are extraordinary and compelling reasons warranting a reduction in his sentence, this court can no more ignore the possibility of immunity than it can ignore the possibility of reinfection.[73]

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[70] *See generally* U.S. SENT'G COMM'N, COMPASSIONATE RELEASE DATA REPORT: CALENDAR YEARS 2020 TO 2021 (2021), https://perma.cc/4NCN-CFC9; *cf. Federal Prison Officials Granted Only 36 of 31,000 Compassionate Release Requests During Pandemic,* EQUAL JUST. INITIATIVE, (June 16, 2021), https://perma.cc/L8GT-V7HS ("BOP's failure to release people facing elevated risks of serious illness or death from COVID-19 forced federal judges to act.").

[71] See CDC COVID-19 Response Team*, Preliminary Estimates of the Prevalence of Selected Underlying Health Conditions Among Patients with Coronavirus Disease 2019*, 69 MORBIDITY MORTALITY WKLY. REP. 382 (2020) [hereinafter CDC, *Underlying Heath Estimates*]; CDC COVID-19 Response Team, *Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19)*, 69 MORBIDITY MORTALITY WKLY. REP. 343 (2020) [hereinafter CDC, *Severe Outcomes with Coronavirus*].

[72] *See, e.g.*, United States v. Jackson, No. 4:14-CR-00576, 2020 WL 1955402, at *4 (S.D. Tex. Apr. 23, 2020) (citing CDC guidance regarding groups at higher risk for severe illness from COVID-19).

[73] United States v. Galu, No. 13-00514SOM-2, 2020 WL 5521034, at *3 (D. Haw. Sept. 14, 2020).

This example highlights how individual courts were left to their own devices to gauge not only the degree of risk that an inmate faced, but also the severity of illness or threshold of danger that merited compassionate release. This was further complicated by courts placing the burden on the incarcerated individual to show that "he or she has a condition identified by CDC" and that the "prison conditions are such that BOP cannot effectively prevent the spread of COVID-19."[74] Thus, though the CDC had elaborated specifications on which health conditions elevated risk of COVID mortality and morbidity—and though the DOJ had endorsed CDC guidelines for certain relief[75]—the interpretation of these queries remained wide and varied, were vulnerable to influence by differences in resources and power, and allowed significant opportunities for subjectivity and bias. While the compassionate home-releases of public figures like President Trump's former lawyer Michael Cohen[76] were highly publicized, in the meantime, hundreds of other appeals regarding life-or-death decisions were quickly denied.

B. Chronic Kidney Disease and Compassionate Release in the COVID-19 Era

CKD quickly emerged as a key risk factor for COVID-19 severity, with CDC reports from as early as March 2020 identifying increased risk of hospitalization, intensive care unit admission, and death among patients with underlying CKD.[77] Large multinational studies reaffirmed that the most common risk factor for severe COVID-19 was CKD and that CKD was the second strongest risk factor for COVID-19 severity, only behind age.[78] For individuals suffering chronic illnesses

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[74] United States v. Owens, No. 2:13-cr-00073, 2020 WL 6162783, at *4 (S.D. W. Va. Oct. 21, 2020).

[75] *See* DOJ Memo, *supra* note 68 (citing "the vulnerability of the inmate to COVID-19, in accordance with the Centers for Disease Control (CDC) guidelines" as a factor "[i]n assessing which inmates should be granted home confinement").

[76] Benjamin Weiser & William K. Rashbaum, *Michael Cohen Is Among Prisoners to Be Released Because of Virus*, N.Y. TIMES (Apr. 17, 2020), https://perma.cc/5XV9-K7XE.

[77] *See* CDC, *Severe Outcomes with Coronavirus*, *supra* note 71; CDC, *Underlying Heath Estimates*, *supra* note 71.

[78] *See* ERA-EDTA Council & ERACODA Working Grp., *Chronic Kidney Disease Is a Key Risk Factor for Severe COVID-19: a Call to Action by the ERA-EDTA*, 36 NEPHROLOGY DIALYSIS TRANSPLANT 87, 88 (2021); EJ Williamson et al., *Factors Associated with COVID-19-Related Death Using OpenSAFELY*, 584 NATURE 430, 432 (2020); Andrew Clark et al., *Global, Regional, and National Estimates of the Population at Increased Risk of Severe COVID-19 Due to Underlying Health Conditions in 2020: A Modelling Study,* 8 LANCET GLOB. HEALTH e1003, e1009 (2020).

such as CKD, time was of the essence—an exposure to COVID-19 could quickly rob a person's life in the time it takes to grant a compassionate release order.

Mr. Williams' case tragically demonstrates how the virus far outpaced the judicial process, often with fatal consequences. In 2020, in recognition of his client's serious medical conditions including chronic kidney and heart disease, Mr. Williams' Federal Public Defender sought compassionate release, writing, "all [Mr. Williams] wants now is to spend the little time remaining with his wife, adult sons, and larger family."[79] On April 1, 2020, Judge Rodgers of the Northern District of Florida granted the compassionate release, finding that because of his pre-existing kidney condition, "an outbreak of COVID-19 in Williams' facility would likely have fatal consequences for him." He was right. Mr. Williams died on April 11, 2020 after contracting COVID-19, just two days before he was due for release from the BOP Butner Complex.[80]

Early CDC guidance reflected the scientific consensus[81] that "[h]aving chronic kidney disease of any stage increases [an individual's] risk for severe illness from COVID-19." Some courts adopted these scientific findings in compassionate release decisions.[82] One court also highlighted that COVID-19 itself can cause or worsen kidney disease,[83] noting "that the virus frequently

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[79] Defendant's Amended Motion and Memorandum of Law in Support of Compassionate Release at 2, 15, United States v. Williams, No. 3:04cr95-MCR (N.D. Fla. Mar. 19, 2020), ECF No. 87.

[80] Order Granting Defendant's Motion for Compassionate Release, United States v. Morgan, No. 92-cr-04013-WS-CAS (N.D. Fla. Apr. 27, 2021), ECF No. 2337.

[81] While risk of COVID-19 mortality is graded based on the level of kidney dysfunction (i.e., the least severe stage of CKD [Stage 1] confers a 1.3-fold risk of death compared to a 5-fold greater risk of death for patients with the most severe stage of CKD [Stage 5]), it is crucial to recognize that *any degree of CKD* is associated with elevated risk. *See* Williamson et al., *supra* note 78; Clark et al., *supra* note 78; Luis D'Marco et al., *Coronavirus Disease 2019 in Chronic Kidney Disease*, 13 CLINICAL KIDNEY J. 297, 297-306 (2020); ERA-EDTA Council & ERACODA Working Grp., *supra* note 78; Ron Gansevoort & Luuk Hilbrands, *CKD is a Key Risk Factor for COVID-19 Mortality*, 16 NATURE REVS. NEPHROLOGY 705 (2020); Y. Cheng et al., *Kidney Disease Is Associated with In-Hospital Death of Patients with COVID-19*, 97 KIDNEY INT'L 828 (2020).

[82] United States v. Blake, No. 15-cr-80018, 2020 WL 4677309, at *6 (S.D. Fla. Aug. 12, 2020); *see People with Certain Medical Conditions*, *supra* note 5 (noting a history of cancer "may" increase the risks of COVID-19).

[83] I. Gagliardi et al., *COVID-19 and the Kidney: From Epidemiology to Clinical Practice,* 9 J. CLINICAL MED. 2506 (2020); Mitra Nadim et al., *COVID-19-Associated Acute Kidney Injury: Consensus Report of the 25th Acute Disease Quality Initiative (ADQI) Workgroup*, 16 NAT'L REVS. NEPHROLOGY 747 (2020); Reis Ronco et al., *Management of Acute Kidney Injury in Patients with COVID-19*, 8 LANCET RESPIRATORY MED. 738 (2020).

'wreaks havoc on the kidneys' and can result in kidney failure—even for otherwise healthy individuals."[84]

Yet, many other courts went further into debating which stages of CKD were considered severe enough to warrant compassionate release. They rendered arbitrary, inconsistent decisions on this question. For example, while multiple courts opined that a diagnosis of Stage 2 CKD "increase[s] the risk of severe illness from coronavirus"[85] and merits compassionate release, other courts drew a line in the sand and held that a diagnosis of Stage 3 CKD or worse would be required to satisfy the "extraordinary and compelling" standard for release. In the case of J.R. that we first discussed, the fact that his race-adjusted eGFR was barely above 60 (i.e., conferring a diagnosis of Stage 2 CKD) was what prevented him from meeting the standards for compassionate release, in spite of his comorbid hypertension diagnosis.[86] At his compassionate release hearing, the BOP nurse testified that because the eGFR is "not accurate for African Americans," J.R.'s raw eGFR value of 57 must be adjusted by using the race-based multiplier, resulting in a score of 68.[87] Because an eGFR above 60

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[84] United States v. Aherns, Crim. No. 11-66, 2020 WL 5097512, at *3 (D.N.D. Aug. 28, 2020) (quoting United States v. Devino, 4:11CR3096, 2020 WL 4001195, at *1 (D. Neb. July 15, 2020)).

[85] United States v. Fernandez, No. 2:16-CR-00115-KJM, 2020 WL 5909490, at *5 (E.D. Cal. Oct. 6, 2020); *see also* United States v. Hunt, No. Cr-16-01047-08-PHX-DGC, 2021 WL 197670, at *3 (D. Ariz. Jan. 20, 2021); United States v. Dailey, No. 2:13-cr-00118 KJM, 2020 WL 4504449, at *2 (E.D. Cal. Aug. 5, 2020); United States v. Sos, No. 19-00066 JAO, 2021 U.S. Dist. LEXIS 138079, at *9 (D. Haw. July 23, 2021); United States v. Bailey, No. 2:14-CR-00328-CAS-2, 2021 U.S. Dist. LEXIS 7616, at *7 (C.D. Cal. Jan. 14, 2021).

[86] *Cf.* United States v. Davis, No. 2:98-cr-00114-KJM, 2020 U.S. Dist. LEXIS 243977, at *6 (E.D. Cal. Dec. 28, 2020) ("Chronic kidney disease at any stage increases [the] risk for severe illness from COVID-19 according to the CDC and hypertension might increase one's risk as well."); United States v. Johnson, No. 4:16-577-BHH-1, 2020 U.S. Dist. LEXIS 139033, at *13-16 (D.S.C. Aug. 4, 2020) ("[Defendant's] counsel submitted BOP medical records substantiating Johnson's diagnosis of Chronic kidney disease, stage 3 (moderate) and Essential (primary) hypertension (for which Johnson takes multiple medications) . . . Therefore, the Court finds . . . his medical condition qualifies as an extraordinary and compelling reason warranting consideration for a sentence reduction in the context of the COVID-19 pandemic."); United States v. Johnson, No. 2:14 CR 80, 2020 U.S. Dist. LEXIS 126779, (N.D. Ind. July 17, 2020) (granting compassionate release for a 43-year-old individual based on stage 3 (moderate) chronic kidney disease); United States v. Jenkins, No. 3 :10-cr-200-J-20JBT, 2020 U.S. Dist. LEXIS 253430, at *4 (M.D. Fla. Aug. 30, 2020) (recognizing that "Stage 3 (moderate) chronic kidney disease . . . combined with Covid-19, is a serious medical or physical condition" but denying compassionate release for non-health-related reasons.") (internal citations and quotations omitted).

[87] Transcript of Telephonic Motion Hearing Before the Honorable Randolph D. Moss United States District Judge at 11, United States v. Robinson, No. 04-128 (RDM) (D.D.C. Mar. 17, 2021), ECF No. 1425 [hereinafter Hearing Transcript].

was deemed to be within normal parameters, it weighed against a finding of a CKD diagnosis.[88] Thus, the faulty race-based adjustment proved decisive in denying J.R. a formal CKD diagnosis. This error was unsuccessfully challenged by J.R.'s legal team in the district court and on appeal.[89]

C. Harms Resulting from the use of eGFR in Clinical Decisions

The cases of J.R. and of other Black defendants provide real-world evidence that the eGFR race multiplier directly caused the denial of compassionate release for individuals who, if not for the adjustment, would otherwise meet the diagnostic threshold for CKD Stage 3. Moreover, beyond these cases alone, the diagnosis of CKD often depends upon regular medical monitoring and care that is simply not provided within prison facilities.

As noted in previous sections, chronic kidney disease is defined by the National Kidney Foundation as "abnormalities of kidney structure or function, present for >3 months, with implications for health."[90] The diagnostic requirement of showing kidney dysfunction for over three months has material implications for incarcerated individuals, because there are barriers to obtaining laboratory testing reliably over many months. For example, in J.R.'s case, a medical expert pointed to the lack of frequent testing as a barrier to obtaining a formal CKD diagnosis. J.R.'s medical records showed that he was tested once in each of October 2020, April 2020, November 2019, and December 2018.[91] According to the medical expert, the lengthy gaps in testing and the lack of laboratory data to "qualify him for the diagnosis"[92] were indicative of BOP's "inability . . . to provide the standard of medical care."[93]

Furthermore, routine monitoring, pharmacological care, and nephrology referrals depend upon one's eGFR score, and, in part due to the race-adjusted eGFR, these medical resources are less frequently available to Black individuals whose kidneys appear healthier than non-Black individuals.[94]

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[88] Brief of Defendant-Appellant, *supra* note 7, at 13.
[89] *See supra* notes 12-14 and accompanying text.
[90] *See What Is the Criteria for CKD*, *supra* note 17.
[91] Declaration of William Weber, MD, MPH, *supra* note 1, at ¶ 9.
[92] *Id.* at ¶ 11.
[93] *Id.* at ¶ 18.
[94] *See* Supplement in Support of Compassionate Release in Response to March 16, 2021 Hearing at 4 n.3, United States v. Robinson, No. 04-128 (RDM), 2021 WL 1318027 (D.D.C. Apr. 8, 2021), ECF No. 1428.

Lastly, due to the artificial inflation of the eGFR score, Black individuals face an additional obstacle in showing that they meet the diagnostic standards of CKD (i.e., eGFR below 60), which is exacerbated by the dearth of opportunities for medical tests in prisons. In this way, the inequities set by clinical standards impact prisoners and the justice system.

D. Harms Resulting from the use of eGFR in Compassionate Release Decisions

The eGFR impacts not only clinical outcomes but also compassionate release decisions. In J.R.'s medical records, the lack of lab data regarding his kidney health[95] was pointed out as a reason for his undiagnosed kidney disease, and the Judge denied his compassionate release application based on his kidney disease being undiagnosed.[96] Yet, J.R.'s medical expert opined in his compassionate release application: "[J.R.]'s lack of current laboratory data prevents me from concluding that he has CKD, but his known kidney impairment likely puts him at higher risk for poor outcomes from COVID-19 . . . I am very concerned that [J.R.] would either have CKD if his labs were rechecked or will progress to CKD in the near future."[97]

The below table juxtaposes the eGFR score of Black incarcerated individuals and non-Black incarcerated individuals and compares the outcomes of their compassionate release applications.[98]

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[95] The Judge noted that the lab tests were outdated and sparse, noting that J.R.'s most recent GFR results were from November 2019, April 2020, and end of October of 2020, and there had been no other tests administered as of the date of the decision in April 2021. *See Robinson*, 2021 WL 1318027, at *9-10.

[96] *See id.* at *9 (noting

> [T]he government observes that Robinson 'has not been diagnosed by his BOP medical providers with chronic kidney disease, despite [his] lab results.' Robinson, in turn, responds that he should not be held accountable for BOP's failure to provide a full diagnostic workup and that, if anything, BOP's failure to make the diagnosis shows that he is not receiving the care that he needs while incarcerated.

(internal citations omitted)).

[97] Declaration of William Weber, MD, MPH, *supra* note 1, at ¶¶ 15-19.

[98] *See* United States v. Fernandez, No. 2:16-CR-00115-KJM, 2020 U.S. Dist. LEXIS 185485, at *13 (E.D. Cal. Oct. 5, 2020).

Case (Dkt No.)	Defendant's Race	eGFR (Race-Unadjusted)	eGFR (1.2X African American race multiplier applied)	Compassionate Release Application (Granted /Denied)
J.R.	Black	57	68	Denied
United States v. Jones, No. 3:19-CR-60-DRL-MGG, 2020 WL 4188208 (N.D. Ind. July 21, 2020)	Black	50 CKD 3	60[99] CKD 2	Denied
United States v. Hiller, No. ELH-18-0389, 2020 U.S. Dist. LEXIS 228122, at *22-23 (D. Md. Dec. 4, 2020)	Non-Black (White)	57[100]	68 CKD 2	Granted
United States v. Anderson, No. 99-229(1) ADM/AJB, 2020 U.S. Dist. LEXIS 212002, at *4 (D. Minn. Nov. 13, 2020)	Non-Black	55[101]	66 CKD 2	Granted

TABLE A. Comparison of eGFR score (Race-Unadjusted) and eGFR (Race-Adjusted) and Impact on Actual and Likely Outcomes for Compassionate Release.

In sum, there are countless examples of Black defendants who were denied compassionate release because the unfounded rationale of eGFR race correction obfuscated a formal diagnosis of Stage 3 Chronic Kidney Disease.[102]

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[99] United States v. Jones, No. 09-CR-83-CJW-MAR, 2020 WL 4193269, at *4 (N.D. Iowa July 21, 2020) (citation omitted) ("Defendant's kidney filtration rate was 60, indicating his kidney disease may be returning to some degree. His record, however, notes that a rating in excess of 60 'suggests chronic kidney disease if found over a 3 month period.'").

[100] Response re Order at Exh. 1, United States v. Hiller, No. 1:18-cr-00389-ELH (D. Md. Dec. 1, 2020), ECF No. 50-1

[101] Response in Opposition to Motion for Compassionate Release at Exh. 5, United States v. Anderson, No. 99-cr-229 (D. Minn. Oct. 6, 2020), ECF No. 372-5.

[102] *See, e.g.*, *Jones*, 2020 WL 4193269 (denying applicant compassionate release where his

III. DISMANTLING RACE-BASED MEDICINE THROUGH THE LENS OF CIVIL RIGHTS

A. Potential Civil Rights Claims Against Race-Adjusted eGFR

In this section, we explore how civil rights lawsuits may be used to provoke change in the use of race-based eGFR for compassionate release decisions. Race-based discrimination is prohibited under various families of Federal and State laws. In the context of the Federal Bureau of Prisons, the Administrative Procedure Act and Equal Protection Clause may provide a theory of liability and relief. If the use of a race-based eGFR pertains to the conduct of federally funded activities, claims under Title VI and Section 1557 of the Affordable Care Act would be applicable. In clinical settings, state and local human rights laws as well as torts and contract claims may be available.[103]

1. Administrative Procedure Act

The Administrative Procedures Act ("APA") "provides a civil cause of action to those suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute. 5 U.S.C. § 702." [104] The APA "functions as an omnibus judicial-review provision, permitting suits for agency violations of numerous statutes of varying character that do not themselves include causes of action for judicial review."[105] The judicial review process under the APA (5 U.S.C. § 706) has been available for claims brought by federal defenders against federal prison facilities that failed

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eGFR score was 60); United States v. Jones, No. 1:15-cr-00092-JMS-MJD, 2020 WL 5569824 (S.D. Ind. Sept. 17, 2020) (denying a black individual's compassionate release application based on eGFR > 60 though he had a history of kidney problems and higher than normal creatinine levels).

[103] While Bivens claims and the Federal Tort Claims Act are often used in the context of prisoners' litigation, these claims are not analyzed in this Article given that it specifically focuses on challenging the BOP policies that impact the incarcerated population across the board on the basis of race. *See, e.g.*, Class Action Complaint for Declaratory and Injunctive Relief at 4, Jonathan Blades v. Merrick Garland, 1:22-cv-00279 (D.D.C. 2022), https://perma.cc/HK6Y-VG3A; Thomas R. Folk, *The Administrative Procedure Act and the Military Departments*, 108 MIL. L. REV. 135, 154 (1985) ("The Supreme Court has repeatedly recognized [the Feres] exception to the FTCA . . . despite the FTCA's failure to mention such an exception with other explicit exceptions applicable to activities by the armed forces.").

[104] N. Godfrey, *Institutional Indifference*, 98 OR. L. REV. 151, 176 (2020) (citing Simmat v. U.S. Bureau of Prisons, 413 F.3d 1225, 1238 (10th Cir. 2005) (noting that the Administrative Procedure Act allows for suits against the government in prisoners' rights contexts)).

[105] *Id.*

to permit daily legal visitations to incarcerated individuals in violation of the Sixth Amendment right under the Constitution.[106]

Similarly here, BOP's policy and practice of using the race-based eGFR formula can be construed as a claim under the APA for the BOP's deprivation of incarcerated individual's right to medical care pursuant to 18 U.S.C. § 4042, right against cruel and unusual punishment under the Eighth Amendment, and the right under the Equal Protection Clause of the Fourteenth Amendment.[107] Accordingly, an incarcerated individual may challenge the BOP's policy and practice that uses the race-based eGFR in determining the eligibility and approval of their compassionate release application.[108] The lack of scientific basis for the race-based eGFR coefficient, in conjunction with the professional medical consensus against its use, would allow an incarcerated individual to show that the policy is "arbitrary and capricious" so as to constitute a violation of the APA. In addition, the use of the race-based eGFR formula would run counter to BOP's own policy and regulations that prohibit discrimination against incarcerated individuals on the basis of race, including in administrative decision-making and in providing access to medical programs.[109] BOP's own regulations prohibit race-based discrimination as codified under 28 C.F.R. § 551.90: "Bureau staff shall not discriminate against inmates on the basis of race, religion, national origin, sex, disability, or political belief. This includes the making of administrative decisions and providing access to work, housing and programs."[110] The APA claims would properly address BOP's continued use of race-based standards that explicitly harm Black individuals by delaying a CKD diagnosis and delaying medical treatment and resources.[111]

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[106] Fed. Defs. of N.Y., Inc. v. Fed. Bureau of Prisons, 954 F.3d 118, 128 (2d Cir. 2020) (citing Sharkey v. Quarantillo, 541 F.3d 75, 83 (2d Cir. 2008); and Lexmark Int'l, Inc. v. Static Control Components, Inc., 572 U.S. 118, 130 (2014)).

[107] *See generally* Ajaj v. Fed. Bureau of Prisons, No. 08-CV-02006-MSK-MJW, 2011 WL 902440, at *3 (D. Colo. Mar. 10, 2011), *aff'd*, 561 F. App'x 657 (10th Cir. 2014).

[108] Where state correctional facilities use the race-based eGFR, Section 1983 claims may be available to seek legal remedies.

[109] 28 C.F.R. § 551.90 (1998).

[110] *Id.*

[111] *See* Class Action Complaint for Declaratory and Injunctive Relief at ¶¶ 27-31, Blades v. Garland, No. 22-cv-279 (D.D.C. Feb. 3, 2022) (detailing recently-brought APA claims to challenge BOP's policies and procedures).

2. Equal Protection Clause

The Equal Protection Clause would provide a remedy for incarcerated individuals in both state and federal facilities who have suffered from race-based classifications. In state facilities, Section 1983 (42 U.S.C. § 1983) would provide protection from Equal Protection violation.[112] Here, the prison policies that embrace the eGFR's race-based classification would be subject to strict scrutiny review, and the BOP would need to show that the challenged classification serves a "compelling state interest" and that the race-based coefficient is "necessary to serve that interest."[113,114]

In addition, an incarcerated individual may bring a *Bivens* action under 42 U.S.C. § 1981 and a violation of Equal Protection under the 14th Amendment, which prohibits race discrimination upon showing that the individual is "(i) a member of a protected class (*i.e.*, that he is not white); (ii) that each charged Defendant took some action against him that interfered with an activity protected under § 1981; and (iii) that the Defendant took that action with the intent to discriminate . . . because of race."[115]

The standards for showing a constitutional violation of the Equal Protection Clause are well established under case law:

> Prisoners are protected under the equal protection clause of the Fourteenth Amendment from invidious discrimination based on race. Indeed, prisoners do not surrender their rights to equal protection at the prison gate. Absent a compelling state interest, racial discrimination in administering prisons violates the equal protection clause. The first step in an equal protection case is determining whether the plaintiff has

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[112] *See* Anderson v. Cooper*,* No. 94 C 5912, 1995 U.S. Dist. LEXIS 2605, at *1 (N.D. Ill. Mar. 1, 1995).

[113] Loving v. Virginia, 388 U.S. 1 (1967) (upholding strict scrutiny standard); *see also* Corr. Servs. Corp. v. Malesko, 534 U.S. 61, 72 (2001) ("If a federal prisoner in a BOP facility alleges a constitutional deprivation, he may bring a *Bivens* claim against the offending individual officer, subject to the defense of qualified immunity. The prisoner may not bring a *Bivens* claim against the officer's employer, the United States, or the BOP.").

[114] Johnson v. California, 543 U.S. 499, 509 (2005) ("Because the [California Department of Corrections]'s policy is an express racial classification, it is immediately suspect . . . We therefore hold that the Court of Appeals erred when it failed to apply strict scrutiny to the [Department]'s policy and to require the [Department] to demonstrate that its policy is narrowly tailored to serve a compelling state interest." (citation omitted)).

[115] *Ajaj*, supra note 107; *see, e.g.*, Hampton v. Dillard Dep't Stores, Inc., 247 F.3d 1091, 1102 (10th Cir. 2001).

> demonstrated that he was treated differently from others who were similarly situated to him.[116]

As shown in Table A above, incarcerated individuals who are Black and whose kidney health has been determined using the race-based eGFR formula may show that they were "treated differently from others who were similarly situated to" them in decisions related to clinical treatment and compassionate release determinations. In J.R.'s case, the BOP nurse practitioner testified that per BOP's practices, "[eGFR] 60 is like the line drawn in the sand" and that unless the eGFR fell below 60, BOP would not render treatment, monitoring, or diagnosis for CKD.[117] Although most courts have agreed that "[c]hronic kidney disease at any stage increases [the] risk for severe illness from COVID-19,"[118] many courts looked at lab results which state "[a] calculated GFR <60 suggests chronic kidney disease if found over a 3 month period" to determine whether the risk of CKD posed a serious enough risk to justify compassionate release.[119] Due to the race-based eGFR multiplier and the heterogenous quality of health care provided in prisons and jails, Black incarcerated individuals may show that delays and disparities in their care—such as delayed referral to a nephrologist, inadequate access to early CKD treatments, and insufficient frequency of laboratory testing—impact their ability to show that they are eligible for compassionate release.[120]

3. Title VI and Section 1557

Title VI of the Civil Rights Act and Section 1557 of the Patient Protection and Affordable Care Act (42 U.S.C. § 18116 et seq.) may be used to challenge discriminatory policies and conduct of federal funding recipients. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d) prohibits discrimination on the basis

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[116] Anderson v. Cooper, 1995 U.S. Dist. LEXIS 2605, at *8.

[117] Hearing Transcript, *supra* note 87, at 34 ("You hit that 60, that's where you've really got to start looking and seeing about are they being compliant with lifestyle modifications, is there something that you have missed, maybe an undiagnosed diabetes.").

[118] *See, e.g.*, United States v. Davis, No. 2:98-cr-00114-KJM, 2020 U.S. Dist. LEXIS 243977, at *6 (E.D. Cal. Dec. 28, 2020) (internal quotations omitted).

[119] United States v. Jones, No. 1:15-cr-00092-JMS-MJD, 2020 U.S. Dist. LEXIS 170424, at *3 (S.D. Ind. Sept. 17, 2020).

[120] Diao et al., *supra* note 43, at 184-85, estimated in JAMA that removing race from eGFR calculations would make an estimated 14,000 Black patients newly eligible for kidney transplants, 45,000 for Medicare coverage of CKD education, 60,000 for specialist referral, and 130,000 for medical nutrition coverage.

of race by programs and activities receiving federal funds. Section 1557, incorporating Title VI, provides that an individual shall not be excluded from participation in, be denied the benefits of, or be subjected to discrimination on the grounds prohibited under Title VI of the Civil Rights Act of 1964 (race, color, national origin), under any health program or activity, any part of which is receiving federal financial assistance. Examples of recipients of federal financial assistance include "private institutions of higher education that receive federal funds from students who pay their tuition with Federal financial aid, . . . police departments that receive federal grants to create or sustain law enforcement programs, and . . . public hospitals that receive federal assistance and even private health care facilities that benefit from federal funds" subjecting them to the auspices of Title VI.[121] Individuals may bring an action under Title VI against recipients of federal funding to address illegal discrimination based on disparate treatment because the explicit race-based eGFR treats Black individuals in a different manner than non-Black individuals.[122] Similarly, Section 1557 affords a private right of action for individuals.[123] While BOP's status as a federal agency may preclude individuals from bringing a direct action against them under Title VI and Section 1557,[124] these statutes would be a

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[121] Adrian D. Samuels & Mariah L. Cole, *Utilizing Title VI as a Means to Eradicate Health Discrimination*, 10 J. HEALTH DISPARITIES RSCH. & PRAC. 31 (2017).

[122] *See , e.g.*, 45 C.F.R. § 92.302(d) ("An individual or entity may bring a civil action to challenge a violation of Section 1557 or this part in a United States District Court . . ."); *see* Alexander v. Sandoval, 532 U.S. 275 (2001) (limiting private right of action under Title VI for disparate treatment claims); *see also* Griffin v. Verizon Commc'ns Inc., No. 1:16-CV-00080-AT, 2017 WL 6350596, at *3 (N.D. Ga. Sept. 26, 2017), *aff'd,* 746 F. App'x 873 (11th Cir. 2018) ("In any event, other district courts have held that, through Section 1557's incorporation of four other federal statutes, Section 1557 affords a private right of action."); Callum v. CVS Health Corp., 137 F. Supp. 3d 817, 848 (D.S.C. 2015); Rumble v. Fairview Health Servs., No. 14–cv–2037 (SRN/FLN), 2015 WL 1194415, at *7 n.3 (D. Minn. Mar. 16, 2015); Se. Pa. Transp. Auth. v. Gilead Scis., Inc., 102 F. Supp. 3d 688, 698 (E.D. Pa. 2015) ("We therefore find that Congress intended to create a private right of action for alleged violations of Section 1557."); Grossman v. Dirs. Guild of Am., Inc., No. EDCV 16-1840-GW(SPX), 2017 WL 5665024, at *6 (C.D. Cal. Mar. 6, 2017) (reaffirming incorporation of Section 1557 private right of action, but disaffirming a right to action to Sections 2706 and 2719); *cf.* Ass'n of N.J. v. Horizon Healthcare Servs., Inc., No. 16–08400(FLW), 2017 WL 2560350, at *5 (D.N.J. June 13, 2017).

[123] Cummings v. Premier Rehab Keller, P.L.L.C., 142 S. Ct. 1562, 1569-70 (2022) ("[I]t is 'beyond dispute that private individuals may sure to enforce' [Section 504 and Section 1557].").

[124] *See* Maloney v. Soc. Sec. Admin., 517 F.3d 70, 75-76 (2d Cir. 2008) (concluding "that, as

viable avenue to challenge the practices of federal funding recipients (i.e., hospitals and labs that receive federal funding) that use the race-based eGFR.[125]

Opportunities to leverage Section 1557 in addressing both racial discrimination broadly and race-based medical algorithms specifically may continue to expand per the Department of Health and Human Services' proposed rules in July 2022.[126] In particular, the proposed rule notes that Section 1557 includes a private right of action based on *Cummings v. Premier Rehab Keller* and provides specific procedures for administrative enforcement actions in response to HHS OCR complaints.[127] Moreover, Proposed § 92.210 would be the first federal rulemaking to formally enact regulatory guidance and oversight on the use of clinical algorithms in decision-making, with a particular emphasis on rectifying harms caused by discriminatory race-based algorithms. Codifying interventions to redress racism in clinical algorithms into Section 1557 will build upon existing civil rights law and may help agencies leverage Section 1557 as a vehicle for advancing anti-racist care.[128]

4. Other Legal Theories

Anti-discrimination laws under relevant state and local human rights laws may afford potential causes of actions for race-based discrimination for challenges against hospitals and healthcare providing entities. The State and City Laws – which apply to public accommodations which include hospitals and healthcare providers – can be more protective than federal statutes and may

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with Title VI, the Age Discrimination Act does not apply to a federal agency implementing a federal program"); Jersey Heights Neighborhood Ass'n v. Glendening, 174 F.3d 180, 191 (4th Cir. 1999) (noting that Title VI does not provide a cause of action against the United States); Wash. Legal Found. v. Alexander, 984 F.2d 483, 487-88 (D.C. Cir. 1993); Women's Equity Action League v. Cavazos, 906 F.2d 742, 750 (D.C. Cir. 1990); Cottrell v. Vilsack, 915 F. Supp. 2d 81, 91 (D.D.C. 2013) (finding a nondiscrimination provision in a federal funding statute does not apply to programs "that are conducted directly by a federal agency . . ."), *aff'd*, 2013 WL 4711683 (D.C. Cir. 2013), *cert. denied*, 134 S. Ct. 1553 (2014).

[125] *See generally* Complaint, Crowley v. Strong Memorial Hosp., No. 21-cv-1078 (W.D.N.Y. Oct. 1, 2021), ECF No. 1 (involving a patient bringing claims under Title VI and Section 1557 violations against hospitals alleging that the race-based eGFR was used in making kidney transplantation and treatment decisions).

[126] *See* Nondiscrimination in Health Programs and Activities, 87 F.R. 47824 (proposed July 25, 2022), https://perma.cc/BGY9-WKX8.

[127] *Cummings*, 142 S. Ct. at 1562.

[128] Katie Keith, *HHS Proposes Revised ACA Anti-Discrimination Rule*, HEALTH AFFS. FOREFRONT (July 27, 2022), https://perma.cc/779K-87M4; Rohan Khazanchi et al., *Leveraging Affordable Care Act Section 1557 to Address Racism in Clinical Algorithms*, HEALTH AFFS. FOREFRONT (Sept. 30, 2022), https://perma.cc/BN6U-Y4JP.

have favorable standards for civil rights litigations in terms of showing liability, intent, and proving damages. For example, the New York State Human Rights Law "deems it unlawful discrimination if a place of public accommodation denies its accommodations to any person on the basis of race, creed, color, national origin, sex, or disability or marital status" and provides a private right of action for aggrieved individuals to seek relief.[129] New York City Human Rights Law provides for anti-discrimination claims which are reviewed "independently from and more liberally than their federal and state counterparts."[130] In addition, depending on the facts and relationships between the parties in the suit, claims based on common law contracts and torts may be available.

IV. REEXAMINING BROADER LEGAL IMPLICATIONS OF RACE-BASED CLINICAL ALGORITHMS

The application of race-based medical algorithms not only impacts individuals—as demonstrated through COVID-19 compassionate release cases such as J.R.'s and A.W.'s—but also puts on clear display the fact that Black people are systemically subjected to differential care based on pseudoscientific rationales. These risks are not theoretical, but imminent and tangible.

Astonishingly, race-based eGFR is not the only racialized algorithm used in clinical practice.[131] In this section, we find it important to mention two other relevant examples of race-based algorithms that have been addressed in court proceedings, and key lessons learned for future advocacy.[132]

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[129] In re Cahill v. Rosa, 89 N.Y.2d 14 (1996); N.Y. Exec. Law § 296(2)(a) (McKinney 1974)

[130] Loeffler v. Staten Island Univ. Hosp., 582 F.3d 268, 278 (2d Cir. 2009) (internal quotations omitted); N.Y.C. Admin. Code § 8-101 et seq (2015).

[131] *See* Vyas et al., *supra* note 29.

[132] Similar race-based risk prediction calculators for pediatric urinary tract infections, successful vaginal birth after cesarean section, and anemia in pregnancy have already been reconsidered and dismantled, but others remain. *See* Jyoti Madhusoodanan, *A Troubled Calculus*, 373 SCI. 380, 380-83 (2021), https://perma.cc/88XR-VKGM; Rachel Kowalsky, *The Case for Removing Race from the American Academy of Pediatrics Clinical Practice Guideline for Urinary Tract Infection in Infants and Young Children with Fever*, 174 JAMA PEDIATRICS 229, 229-30 (2020), https://perma.cc/SF5S-4BJX; *Retirement of UTI Guideline Among AAP Efforts to End Race-Based Medicine*, AM. ACAD. PEDIATRICS NEWS (Aug. 5, 2021), https://perma.cc/GDB5-DZ2X; *see also* UTICALC, https://perma.cc/DSB5-8G72; William A. Grobman, *Prediction of Vaginal Birth After Cesarean Delivery in Term Gestations: A Calculator Without Race and Ethnicity*, 225 AMER. J. OBSTETRICS & GYNECOLOGY 664 (2021), https://perma.cc/9PHA-24RC; Katie Palmer, *Changing the Equation: Researchers Remove*

A. Pulmonary Function Testing and Workers' Compensation

Pulmonary function tests (PFTs), also known as spirometry, are used for the screening, diagnosis, management, and evaluation of the progression of lung disease.[133] Race-based modifiers included in PFT equations[134] assume a 10-15% smaller lung capacity for Black patients and a 4-6% smaller lung capacity for Asian patients. Frighteningly, and similarly to the biologization of race and muscle mass to justify race-adjusted eGFR equations, the ideological origins of race adjustments in PFT equations dates back to racist notions of racial differences in lung capacity as a justification for the enslavement of Black workers.[135]

Clinically, using spirometric references based on lower average values for Black and Asian patients may lead to under-identification of lung damage and create delays in diagnosis or treatment for pulmonary problems. For example, Black patients have faced higher COVID-19 mortality rates, and Anderson et al. in *The Lancet* highlighted how the routine use of race-based lung function tests could further exacerbate this horrifying and ongoing disparity.[136] Black Americans also face higher risk of death from asthma[137] and acute respiratory distress syndrome.[138] A race-based algorithm that systematically delays their

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Race From a Calculator for Childbirth, STAT (June 3, 2021), https://perma.cc/M3SK-52CU; Kaveh Waddell, *Taking Race Out of an Equation for Childbirth*, CONSUMER REP. (May 31, 2021), https://perma.cc/XM2P-M7NW; Michele Cohen Marill, *Rethinking Race in Medicine: ACOG Removes a Race-Based Cutoff for Anemia in Pregnancy*, HEALTH AFFS. FOREFRONT (Aug. 19, 2021), https://perma.cc/96TL-9JCP; Amer. Coll. of Obstetricians and Gynecologists' Comm. on Practice Bulls.—Obstetrics, *Anemia in Pregnancy: ACOG Practice Bulletin, Number 233*, 138 OBSTETRICIAN GYNECOLOGY e55, e55-e64 (2021), https://perma.cc/RW9A-2HUU.

[133] Warren M. Gold, et al., *Pulmonary Function Testing*, *in* 1 MURRAY AND NADEL'S TEXTBOOK OF RESPIRATORY MEDICINE 407, 407-35 (6th ed. 2016) (1988).

[134] Recommended equations for use in the United States include the Global Lung Initiative (GLI) 2012 equation and the National Health and Nutrition Examination Survey (NHANES) III equation. *See* David Kaminsky, *Overview of Pulmonary Function Testing in Adults*, UPTODATE (2021), https://perma.cc/ZVF8-NPUZ.

[135] Lundy Braun, *Race, Ethnicity and Lung Function: A Brief History*, 51 CANADIAN J. RESPIRATORY THERAPY 99, 99-101 (2015), https://perma.cc/D2Y9-C8EH.

[136] Meredith Anderson et al., *Could Routine Race-Adjustment of Spirometers Exacerbate Racial Disparities in COVID-19 Recovery?*, 9 LANCET 124, 124-25 (2021), https://perma.cc/323J-ZYRX.

[137] *See* Emily Pennington et al., *Trends in Asthma Mortality in the United States: 1999 to 2015*, 199 AM. J. RESPIRATORY & CRITICAL CARE MED. 1575 (2019), https://perma.cc/X86T-TKSX.

[138] Christian Bime et al., *Racial Differences in Mortality from Severe Acute Respiratory Failure in the United States, 2008–2012*, 13 ANNALS AM. THORACIC SOC'Y 2184 (2016).

diagnosis and, thus, delays access to early treatment is necessarily suspect for contributing to pulmonary health disparities along racial lines.

Like the racialized application of eGFR, the misuse of race in pulmonary algorithms causes demonstrable harm, namely through creating differential, race-specific standards for diagnosis that can act as barriers to treatment, social resources, and downstream care. For example, starting in the 1970s, the Owens Corning Fiberglas Corporation that manufactured asbestos products faced mass-tort and class action lawsuits by thousands of workers.[139] At issue in the lawsuit was the race-based PFT standard used to categorize workers based on the severity of their injury, essentially setting a cut-off for "[those] who would be deemed sick enough to get a trial and [those] who would not."[140] In a Baltimore court, Owens Corning's lawyers argued that several Black workers should be barred from pursuing the lawsuit because they were not sick enough. To triage the massive filings in the lawsuit, Judge H.H. Kaplan of the Baltimore Circuit Court initially agreed with race-based clinical guidelines, stating that, "[p]redicted [lung test] values shall be corrected for race or ethnic origin as appropriate."[141] However, when the issue was raised during proceedings, experts were divided on the issue of race correction. For example, the American Medical Association and American Thoracic Society supported the race correction for PFTs stating that, "African-Americans score lower on lung tests" than non-Black individuals and that the "reason for the difference is unclear."[142] Opposing these views were other scholars, including Dr. Lewis Rubin, who stated, "Lung function is not clearly a race-related issue," and Dr. Robert Sussman who opined, "it's ridiculous."[143] Ultimately, Judge Kaplan—upon hearing medical experts' testimony—denied the use of race corrections to determine the Black workers' compensations.[144]

The outcome of the Owens Corning workers' compensation case begets an important question in the current context: with the present-day acknowledgment and recognition from the medical establishment (now

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[139] Michelle Whitmer, *Owens Corning Fiberglas Corporation*, ASBESTOS.COM (Jan. 26, 2022), https://perma.cc/NW67-6UWR.

[140] Erin Texeira, *Racial Basis for Asbestos Lawsuits?; Owens Corning Seeks More Stringent Standards for Blacks*, BALT. SUN (Mar. 25, 1999), https://perma.cc/ZJ6N-W4ZM.

[141] *Id.*

[142] *Id.*

[143] *Id.*

[144] Lundy Braun, *Twisting Lung Function Measurements Based on Race*, UTNE READER (Sept. 23, 2014), https://perma.cc/VM5C-HC66.

including the American Medical Association)[145] that race is a social construct rather than a biological one, would this case now be viewed differently?

Emerging studies have further explained how PFT race-correction affords employers a way to pay Black and Asian individuals less for workers' compensation injuries:

> Selective use of race-specific algorithms for workers' compensation reduces industries' liability for worker health, illustrating racial capitalism operating within public health . . . widespread and unexamined belief in inherent physiological inferiority of Black Americans perpetuates systems that limit industry payouts for workplace injuries. . . .
>
> Under racial capitalism, attention is drawn away from workplace hazards by arguing that workers are inherently at high risk of ill health due to their own racial and behavioral susceptibilities, masking and justifying how labor is structured to concentrate risky, low-wage work among non-White or otherwise marginalized workforces.[146]

Decreased lung function that would be deemed pathologic in a white patient may be considered "normal" in a Black patient, just as racialized adjustment of eGFR recategorized J.R. as an individual without clinically significant kidney disease. And, as demonstrated once again in this section, the implications of race-based algorithms reach far beyond clinical medical treatment. It is used within a broader architecture of racial capitalism, disparately impacting the allocation of specialty resources, government support, and worker's compensation to the greater benefit of the white and the wealthy and at the cost of the non-white and the poor.[147]

B. Neurocognitive Examinations and the National Football League

In 2013, the National Football League (NFL) settled the massive "NFL Players' Concussion Injury Litigation" lawsuit, a class action brought by former football players seeking compensation for cognitive impairment secondary to

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[145] *See New AMA Policies Recognize Race as a Social, Not Biological, Construct*, AM. MED. ASS'N (Nov. 16, 2020), https://perma.cc/RL8X-LPP8; *see also* Khazanchi et al., *supra* note 29.
[146] Elizabeth McClure et al., *Racial Capitalism Within Public Health—How Occupational Settings Drive COVID-19 Disparities*, 189 AM. J. EPIDEMIOLOGY 1244, 1244-45 (2020).
[147] *See id.*

repeated concussive head injuries.[148] Pursuant to the final agreement, settlement class members would qualify for monetary awards, but neuropsychological testing and evidence would be required to show the varying levels of neurocognitive impairment suffered.[149] When being evaluated for the neurocognitive impairment, Black former players were "automatically assumed (through a statistical manipulation called "race-norming") to have started with worse cognitive functioning than [w]hite former players."[150] Consequently, if a Black former player and a white former player had the same cognitive functioning score in the evaluations, the Black player would be "presumed to have suffered less impairment, and he is therefore less likely to qualify for compensation."[151]

Underpinning the race-norming practice is the insidious presumption that deems "Black retirees to be less intelligent than their non-Black fellow retirees."[152] Such presumption is not grounded in science—only in racism. In fact, racial differences in cognitive outcomes have been linked to numerous social determinants and economic inequities (many of which can be directly attributed to the impacts of structural racism).[153] Thus, racial differences in measured cognitive outcomes may be better explained by considering social and structural determinants of health, rather than falsely biologizing and pathologizing race. As such, and as was the case with eGFR and PFT algorithms, clinicians and researchers have called this practice into question and proposed race-free alternatives.[154]

To combat the inequities identified in the race-norming practice, in August 2020, two Black retired NFL players brought a separate class action on

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[148] Pete Madden et al., *Investigation Finds Questions on Possible Discrimination Against Black Former Players in NFL Concussion Claims*, ESPN (Feb. 3, 2021), https://perma.cc/53ME-JRL4; *see also* Katherine Possin et al., *Perils of Race-Based Norms in Cognitive Testing: The Case of Former NFL Players*, 78 JAMA NEUROL. 377, 378 (2020); *Read the Proposed N.F.L. Concussion Settlement*, N.Y. TIMES (Oct. 21, 2021), https://perma.cc/2H6S-F865; Settlement Agreement at x, In re National Football League Players' Concussion Injury Litigation, No. 2:12-md-02323-AB, 2019 WL 2414196 (E.D. Pa. 2019), ECF No. 11502.

[149] *Read the Proposed N.F.L. Concussion Settlement*, *supra* note 148.

[150] Complaint at 2, ¶ 1, Henry v. Nat'l Football League, No. 2:20-CV-04165 (E.D. Pa. 2020), ECF No. 1.

[151] *Id.*

[152] *Id.* at 2, ¶ 3.

[153] Carl V. Hill et al., *The National Institute on Aging Health Disparities Research*, 25 ETHNICITY & DISEASE 245, 254 (2015).

[154] *See* Possin et al., *Perils of Race-Based Norms in Cognitive Testing: The Case of Former NFL Players*, 78 JAMA NEUROLOGY 377 (2021).

behalf of all similarly situated individuals who "received testing under the Settlement Agreement . . . and whose test results were subjected to any form of adverse adjustment based on that individual's status as Black or African-American."[155] In the words of the lead Plaintiff, the former NFL running back Najeh Davenport, "[w]hen they use a different scale for African-Americans versus any other race . . . that's literally the definition of systematic racism."[156]

The litigation was ultimately settled through mediation, with the settlement agreement stipulating the elimination of race-norming. [157] Importantly, the settlement recommended a new method to remove race as a considered variable when scoring or classifying neuropsychological test results, and a process of rescoring impacted class members.[158]

In short, race adjustments were misused by the NFL to systematically deny rightful compensation—a decision with significant potential downstream implications for the ~70% of NFL players who identify as Black.[159] From a racial capitalism perspective, race-norming would lead to fewer payouts, benefiting the NFL corporation. After settling the class action lawsuit for over $1 billion, the NFL recently agreed to end the use of race-based cognitive testing benchmarks and investigate allegations of disparate approval rates for dementia claims between Black and white players.[160]

V. RECOMMENDATIONS

A. Cross-Disciplinary Advocacy

The compassionate release decisions during COVID-19 underscore the importance of cross-disciplinary collaboration between legal advocates and medical experts. In courts, medical experts' opinions are relied upon to provide an understanding of technical and scientific concepts and are given considerable weight. Illustrating this point is an excerpt of a hearing where a

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[155] Complaint ¶ 27, Henry v. Nat'l Football League, No. 20-4165 (E.D. Pa. 2020), ECF No. 1.
[156] Kenan Malik, *'Race Norming' is Bigotry that Began with Good Intentions* (June 6, 2021 6PM EDT), https://perma.cc/UDP7-Q56C; *see* Ken Belson, *Black Former N.F.L. Players Say Racial Bias Skews Concussion Payouts*, N.Y. TIMES (Aug. 25, 2020), https://perma.cc/4JHW-QK3G.
[157] *Read the Proposed N.F.L. Concussion Settlement*, *supra* note 148, at 8.
[158] *Id.* at 36 (Exhibit A, Recommendation for Revising the Clinician's Manual . . .).
[159] Complaint ¶ 3, Henry v. Nat'l Football League, No. 20-4165 (E.D. Pa. 2020), ECF No. 1.
[160] Ken Belson, *N.F.L. Concussion Settlement Will Drop Race-Based Assessment for Payouts*, N.Y. TIMES (Oct. 20, 2021), https://perma.cc/MF24-GTD2.

Judge was asked to rule on an individual's compassionate release motion based on his medical status:

> THE COURT: Don't they have a priority list for getting -- for getting transplants in the free world, too? And if he didn't qualify for that list, how is he going to qualify for the free-world list?
>
> Defense Counsel: Because the reason he doesn't qualify in the Bureau of Prisons, what I was told by the case manager, is they don't want the liability.
>
> THE COURT: So this is a question not so much about the law, but about medicine, huh?
>
> Defense Counsel: Yeah.
>
> THE COURT: I don't feel qualified to decide.
>
> . . .
>
> Prosecutor: I'm with you, Judge. I -- I'm not a doctor.
>
> Defense Counsel: Neither am I . . . [161]

Without interdisciplinary teams that encompass clinical medicine and social science expertise, courts may find themselves unwitting enablers of pseudoscience if and when they operationalize inaccurate medical knowledge as support for their decisions. An inerrant eGFR score affects not only the intimate decisions made between healthcare workers and patients in hospitals but also impacts how courts render judgments on compassionate release, creating and exacerbating systemic inequities in the criminal-legal system

B. Moving Beyond Removal of "Race" towards Equitable Health Care Systems

Advocacy efforts must move beyond simply removing race adjustments from individual algorithms towards systematically re-evaluating *all* race-based medical algorithms and remedying any identified downstream racial inequities.

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[161] Status Conference Hearing Transcript at 3-4, USA v. Jackson, No. 14-cr-00576 (S.D. Tex. Apr. 1, 2020), ECF No. 223.

First, the use of race in clinical algorithms writ large should be closely re-evaluated by medical specialty societies, with the explicit intention of measuring its potential to cause disparate harm. Implementation and evaluation of new algorithms can leverage existing quality improvement frameworks and benefit from lessons learned by new coalitional learning communities. [162] Importantly, when reassessing and redressing clinical algorithms, patient voices should be included and amplified.[163]

Second, with regard to eGFR in particular, nationwide uptake of the new race-free CKD-EPI 2021 equation is an immediate imperative, given the consensus around new clinical standards of care.[164]There are multiple steps needed to disseminate patient-centered information, educate clinicians, expand access to necessary laboratory testing, and ensure costs and reimbursements fairly incentivize patients and clinicians alike.[165]

Third, when addressing racialized inequities at the institutional and systems level, race-conscious interventions must be considered to affirmatively address existing healthcare inequities.[166] Existing frameworks for such interventions can build upon foundational work in restorative justice that proposes "Acknowledgement, Redress, and Closure" (ARC) as a framework for measuring, designing, and communicating about antiracist initiatives. [167] Upstream interventions must address racism, not race, as a disease risk factor. [168] While it may be worth considering potential legal barriers to

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[162] *See* Press Release, N.Y.C. Health, Health Department Launches Coalition to Confront Racism in Medical Algorithms (2022), https://perma.cc/3Y8S-MF2V; ROHAN KHAZANCHI & MICHELLE MORSE, N.Y.C. COALITION TO END RACISM IN CLINICAL ALGORITHMS (CERCA) INAUGURAL REPORT (2022).

[163] Glenda V. Roberts, *Understanding My Racial Heritage—Thanks, Ancestry.com—Could Have Gotten Me a Kidney Transplant Earlier,* STAT (Nov. 1, 2021), https://perma.cc/QNJ4-PJU3.

[164] Delgado et al., *supra* note 37, at 288.

[165] Anna S. Heffron et al., *Trainee Perspectives on Race, Antiracism, and the Path towards Justice in Kidney Care*, 27 CLIN. J. AM. SOC'Y NEPHROLOGY 1251 (2022).

[166] *See* Rohan Khazanchi et. al, *Racism-Conscious Praxis: A Framework to Materialize Anti-Oppression in Medicine, Public Health, and Health Policy*, 23 AM. J. BIOETHICS (forthcoming Jan. 2023); David A. Ansell et al., *A Call for Antiracist Action*, 387 NEW ENG. J. MED. e1 (2022); Dave A. Chokshi et al., *How to Act upon Racism—Not Race—as a Risk Factor*, JAMA HEALTH F., Feb. 2022, at 1.

[167] *See Researchers Illustrate the Need for Anti-Racism in Kidney Care Research*, EUREKALERT! (Jan. 29, 2021), https://perma.cc/D7MP-A27K; *see* Bram Wispelwey & Michelle Morse, *An Antiracist Agenda for Medicine,* BOS. REV. (Mar. 17, 2021), https://perma.cc/4RVR-FY7H.

[168] *See* Rohan Khazanchi et al., *Racism, Not Race, Drives Inequity Across the COVID-19 Continuum*, 3 J. AM. MED. ASS'N 1 (2020); Chokshi et al., *supra* note 166.

implementing race-conscious public health interventions,[169] we must also emphasize the questionable legality of facially race-neutral ("colorblind") policies with inequitable impacts.[170] To move past these legal gray areas and prioritize legally (and publicly/politically) defensible race-conscious interventions,[171] flexible strategies can be applied by policymakers and systems leaders that both align with civil rights precedents and leverage *de facto* race-conscious approaches to promote equitable outcomes.[172]

Examples of racism-conscious praxis already exist with regard to repairing the harms of the race-adjusted eGFR. For example, in recognizing that the race-based eGFR delayed access to kidney transplant waitlisting for Black patients, the Organ Procurement and Transplantation Network recently adopted a new policy to restore "lost time" on the waitlist to impacted individuals, thereby elevating their position on the transplant list.[173] Invaluable lessons will be learned from the use of restorative justice paradigms throughout implementation of race-free eGFR, which can similarly be applied to harms caused by other algorithms.

All in all, public health leaders have emphasized that fundamental recognition of our core values must underlie any systems-level intervention seeking to redress inequity:

> Although there is valid debate about the parameters of race-conscious approaches in health, that debate must be placed into context within a question: What is the alternate approach for redressing racial inequities? If there is agreement that racial inequities are persistent and

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[169] *See* Harald Schmidt et al., *Is It Lawful and Ethical to Prioritize Racial Minorities for COVID-19 Vaccines?*, 324 J. AM. MED. ASS'N 2023, 2023-24 (2020).

[170] *See* Scott W. Delaney et al., *Disparate Impact: How Colorblind Policies Exacerbate Black–White Health Inequities*, 174 ANNALS INTERNAL MED. 1450, 1450-51 (2021).

[171] *See* Harald Schmidt et al., *US Adults' Preferences for Race-Based and Place-Based Prioritisation for COVID-19 Vaccines*, 48 J. MED. ETHICS 497, 498-99 (2021). *See generally* Harald Schmidt et al., *Public Attitudes About Equitable COVID-19 Vaccine Allocation: A Randomised Experiment of Race-Based Versus Novel Place-Based Frames*, 48 J. MED. ETHICS 993 (2022).

[172] *See* Rohan Khazanchi et al., *Race, Racism, Civil Rights Law, and the Equitable Allocation of Scarce COVID-19 Treatments*, HEALTH AFFS. FOREFRONT (Feb. 10, 2022), https://perma.cc/M533-PQ6S; Khazanchi et al., *supra* note 128; Khazanchi et al., *supra* note 166.

[173] *Modify Waiting Time for Candidates Affected by Race-Inclusive Estimated Glomerular Filtration Rate (eGFR) Calculations*, ORGAN PROCUREMENT & TRANSPLANTATION NETWORK, https://perma.cc/8MEL-7ZSG.

> unacceptable, what is the solution? The onus must be on those arguing against race-conscious strategies for providing that alternative.[174]

C. Regulations and Enforcement

At a policy level, regulatory agencies have a key role in operationalizing policies in the public and private sectors to advance health equity and redress race-based medicine. The U.S. House of Representatives Ways and Means Committee and the Agency for Healthcare Research and Quality have already deployed Requests for Information (RFI) to inform reports on the misuse of race in clinical algorithms.[175] The Ways and Means staff report, which compiled RFI responses, summarized next steps including consciousness raising and advancing diversity in health professions, re-evaluation of race-based clinical algorithms by sponsoring specialty societies, education for clinicians and transparency with patients about the limitations of race-based algorithms, remedies that ensure appropriate access to care for patients impacted by race-based algorithms, and advancement of broader policies (e.g., implementation of health equity quality metrics, funding allocations for health workforce diversification, and disparities research) that could promote health equity.[176] Additionally, the U.S. Department of Health and Human Services recently announced a proposed rule on Section 1557 of the Patient Protection and Affordable Care Act[177], which would specifically introduce novel regulatory mechanisms to redress race-based algorithms.[178]

Federal agencies (including, but not limited to, the federal Bureau of Prisons and Department of Justice) must first reevaluate their internal policies and algorithms to ensure that the agencies' conduct is in compliance with anti-discrimination laws. Federal agencies also have the responsibility to implement and enforce Title VI with respect to entities that receive federal funding from

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[174] *See* Chokshi et al., *supra* note 166.

[175] *See* Press Release, Richard Neal, Chairman, House Committee on Ways & Means, Feedback From Professional Societies and RFI Respondents on the Misuse of Race Within Clinical Care (Jan. 12, 2021), https://perma.cc/4KXP-KMV6; Agency for Healthcare Rsch. and Quality, *Federal Register: The Daily Journal of the United States Government, Request for Information on the Use of Clinical Algorithms That Have the Potential To Introduce Racial/Ethnic Bias Into Healthcare Delivery* (Mar. 5, 2021), https://perma.cc/PK5K-H4S5.

[176] *See* HOUSE COM. ON WAYS & MEANS, FACT VERSUS FICTION: CLINICAL DECISION SUPPORT TOOLS AND THE (MIS)USE OF RACE: MAJORITY STAFF REPORT (2021), https://perma.cc/7SU9-2KPJ.

[177] *See* Keith, *supra* note 128; Khazanchi et al., *supra* note 128.

[178] *Id.*

the agencies in coordination with the Department of Justice's Civil Rights Division and the Attorney General.[179] Proactive interventions from federal agencies could include conditioning the receipt of federal research funding on the appropriate use of race in scientific research and enrollment of diverse patient populations. Racial and ethnic data collection remains a glaring and significant challenge at healthcare systems and public health departments alike, as emphasized by inaccuracies in electronic health records data and poor data reporting throughout the COVID-19 pandemic.[180] Recommendations and resources compiled by the Centers for Medicare and Medicaid Services on race, ethnicity, language, and social determinants data collection are a helpful starting place to improve the collection of these data.[181] However, affirmative rulemaking from federal agencies like the U.S. Department of Health and Human Services Office of Civil Rights could leverage Title VI, Section 1557, and other existing civil rights provisions to enhance regulatory focus on racial justice, highlight and redress discriminatory insurance benefit designs, require collection and reporting of demographic data, and require that covered entities not use discriminatory algorithms or clinical decision support tools.[182]

Lastly, with regard to the widespread implementation of new race-free eGFR equations in particular, clinical laboratories remain a crucial stakeholder. While the U.S. Pathology and Laboratory Society Leadership has endorsed joint ASN-NKF guidelines on the new race-free option for eGFR estimation,[183] policy opportunities remain to increase access. In 2007, a Standard Reference

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[179] *See* Exec. Order No. 12,250, 28 C.F.R. §§ 42.401-42.415 (1980); *see also* U.S. DEP'T OF JUST. C.R. DIV., TITLE VI LEGAL MANUAL (2021), https://perma.cc/9URW-X7BU.

[180] *See* Nancy Krieger et al., *The Fierce Urgency of Now: Closing Glaring Gaps in US Surveillance Data on COVID-19*, HEALTH AFFS. FOREFRONT (Apr. 14, 2021), https://perma.cc/YLV3-4V6A; Elissa V. Klinger, *Accuracy of Race, Ethnicity, and Language Preference in an Electronic Health Record*, 30 J. GEN. INTERNAL MED. 719, 719–23 (2015); Nancy Krieger et al., *US Racial and Ethnic Data for COVID-19 Cases: Still Missing in Action*, 396 LANCET e81, e81 (2020); Nancy Krieger et al., *Missing Again: US Racial and Ethnic data for COVID-19 Vaccination*, 397 LANCET 1259, 1259-60 (2021).

[181] *See generally* CTRS. FOR MEDICARE & MEDICAID SERVS., INVENTORY OF RESOURCES FOR STANDARDIZED DEMOGRAPHIC AND LANGUAGE DATA COLLECTION (2021), https://perma.cc/9BLC-QXSP.

[182] *See* Jamille Fields Allsbrook & Katie Keith, *ACA Section 1557 as a Tool for Anti-Racist Health Care*, HEALTH AFFS. FOREFRONT (Dec. 8, 2021), https://perma.cc/A5NC-HL36; Khazanchi et al., *supra* note 128.

[183] *See* U.S. Laboratories Endorse Race-Free Equations, NAT'L KIDNEY FOUND. (Feb. 8, 2022), https://perma.cc/D5NA-S89S; W. Greg Miller et al., *National Kidney Foundation Laboratory Engagement Working Group Recommendations for Implementing the CKD-EPI 2021 Race-Free Equations for Estimated Glomerular Filtration Rate: Practical Guidance for Clinical Laboratories*, 68 CLINICAL CHEMISTRY 511, 511-20 (2022).

Material for creatinine was developed by the National Institute of Science and Technology (NIST) and promoted rapid adoption of creatinine-based kidney function measurement by dramatically lowering the cost of this laboratory test.[184] Similar interventions should be promoted to allow for low-cost access to cystatin C, another biomarker of kidney function that can more accurately measure GFR using race-free equations than creatinine alone.[185]

CONCLUSION

In 2020, J.R. spent what time he could being supportive of his family. Though he was locked behind bars, "Pa Pop" kept reciting the ABC's to his granddaughter, excited to help her learn and hoping his bedtime stories would remind her of his voice. He tried to stay strong despite his fear of the pandemic, and his knowledge that his risk of death from COVID-19—as a middle-aged, incarcerated man with high blood pressure and chronic kidney disease—was outsized.[186]

He is just one of many who sat with that fear. He is one of the few that survived those precarious positions.

The heightened risk for morbidity and mortality among prison populations during COVID-19 constituted new "extraordinary and compelling circumstances" to motivate urgent home release for the protection and safety of incarcerated individuals. Courts were in a challenging position to determine—with little institutional knowledge and guidance—the outcomes of applications for compassionate release by individuals whose preexisting conditions imparted significant danger. It is not an exaggeration to call these decisions a matter of life and death.

Courts reviewing compassionate release applications used a standard metric of kidney function—eGFR—to determine the severity of an individual's chronic kidney disease. Because the equations used to calculate eGFR incorporate a race-based multiplier that specifically and systematically underestimated kidney disease severity for Black patients, compassionate release decisions were influenced and, in several cases, even determined on the basis of race.

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[184] *Development of Reference Measurement Procedures and Reference Materials for Creatinine*, NAT'L INST. STANDARDS & TECH. (June 2, 2021), https://perma.cc/W4HP-4QHW.
[185] *See* Inker et al., *supra* note 36.
[186] *See People with Certain Medical Conditions*, *supra* note 5.

In this Article, we articulated the pseudo-scientific origins of race-based medical algorithms and the inequitable impact they pose, particularly for minoritized patients. We addressed key civil rights implications that arise from the use of race-based medical algorithms which systematically disadvantage Black individuals. We explored legal precedents by drawing parallels with scrutiny of the use of race in other medical algorithms, including the direct impact of GFR estimation on kidney transplant eligibility, race-normed concussion protocols in the evaluation of National Football League players, and race-based pulmonary function testing in asbestos workers' compensation cases. We concluded by recommending interdisciplinary task forces and regulatory oversight to reexamine the ways in which medical algorithms produce inequitable outcomes for individuals on the basis of protected classifications like race, often without a sound scientific justification.

J.R. had a safe and solid plan for his release. He had mapped out how to address his health issues, enroll in community college, and volunteer to mentor at-risk youth. His goal satisfied both his own health needs and the needs of the criminal-legal system: to become a positive, contributing member of society upon release.

Though his family is grateful J.R. is alive, they mourn that he is still not by their side. It is a tragedy and unfairness that he is still behind bars. This Article aimed to shed light on the mechanisms that informed the unjust rejection of J.R.'s compassionate release appeal, legal arguments to combat similarly-poised civil rights violations caused by race-based clinical algorithms, and recommendations for stakeholders in health policy, medicine, law, and criminal justice to prevent future harm. Ultimately, we hope J.R.'s story illustrates the devastating human consequences that occur when atavistic, pseudoscientific theories are applied unthoughtfully and disparately. And we hope J.R.'s story motivates restitution for those who have similarly suffered.