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TOBACCO (K GARRISON, SECTION EDITOR)

The Casualties Left Behind in Tobacco's Cinders of Combustion

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Abstract

Purpose of Review This paper (1) defines the scope of tobacco-related health disparities; (2) reviews population-based approaches aimed to eliminate disparities—Medicaid, the U.S. Preventive Health Service Task Force, and the Family Smoking Prevention and Tobacco Control Act; and (3) discusses their potential role in reducing tobacco use and lung cancer disparities.

Recent Findings The implementation of population-based approaches aimed to reduce tobacco use and chronic diseases has been inequitable. The poor are predominately affected by limited access to comprehensive tobacco cessation coverage. Moreover, lung cancer screenings reveal that those disproportionately excluded are African-Americans who have the highest lung cancer incidence and mortality in the USA. The potential impact of the Family Smoking Prevention and Tobacco Control Act is unclear, but the proposed rule to ban menthol in combustible and not non-combustible tobacco products could potentially contribute to a cycle of addiction in disadvantaged communities. Alternative solutions, including civil rights litigation, should be investigated.

Summary Eliminating tobacco-related health disparities is a health, social justice, civil rights, and ethical issue that deserves immediate attention and equitable policy solutions.

Keywords Disparities · Tobacco · Race · Ethnicity · Civil rights · Smoking

Introduction

In 1964, when the first report on *Smoking and Health* was published [1], the differences in smoking among racial/ethnic–gender groups were quite evident. Although 40% of all Americans smoked cigarettes [2], nearly 60% of African-American males compared to 50% of white males in the USA smoked cigarettes [3]. There were limited treatments for tobacco-caused diseases and little understanding of the addictive properties of nicotine [1]. Then, US Surgeon General, Luther L. Terry, and the Surgeon General Advisory Committee (SGAC) had the opportunity to recommend remedial population-based policies to address overall tobacco use and the disparities in the USA. But the SGAC deferred to Congress to address this endemic, setting poor precedence for tobacco prevention and control strategies and particularly for those who historically have benefited at slower rates or not at all from interventions that could reduce tobacco use and related morbidity and mortality [4••].

In this same year, the USA also faced two epidemic social determinants of health—poverty and discrimination—that also influenced the trajectory of tobacco-related health disparities. In 1964, 19% of all Americans lived in poverty; but similar to the racial/ethnic disparities observed in smoking, 15% of whites compared to 42% of African-Americans lived in poverty [5]. To address this epidemic, then President

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Lyndon B. Johnson declared the War on Poverty that laid the foundation for the Economic Opportunity Act (EOA), which funded anti-poverty programs. The Johnson administration viewed the War on Poverty as part of the broader civil rights agenda with the hope that this color-blind approach would be palatable to the nation [6]. But poverty and racism were interconnected, and poverty was "the historic and institutionalized consequence of color," as Harrington points out in *The Other America*, published in 1962 [6].

The second epidemic, discrimination, was at the forefront of America's health and social well-being [6]. With great reluctance from the Senate, the Civil Rights Act of 1964 was passed and prohibited discrimination in the workplace, public accommodations, public facilities, and federally funded agencies; strengthened school desegregation; and barred discrimination in voter registration on the basis of race, color, religion, sex, or national origin [7]. The Civil Rights Act of 1964 laid the foundation for the Voting Rights Act of 1965 [8], which prohibited voter suppression tactics such as literacy tests and poll taxes, and The Fair Housing Act of 1968 [9], which banned discrimination in the sale, rental, and financing of property, aimed to increase access to safe housing. Combined, these three acts—all key social–political determinants of health—aimed to improve the conditions under which marginalized groups lived, worked, played, healed, and prayed.

Like the 1964 Surgeon General's Report on *Smoking and Health*, the Economic Opportunity Act, Civil Rights, Voting Rights, and Fair Housing Acts were all opportunities to address the socio-political–economic inequities intrinsically linked to preventive health and health consequences. Yet more than 50 years later, the cinders of tobacco combustion disproportionately remain in racial/ethnic, low socioeconomic status, and other marginalized communities. Although we can attribute the slow progress to the socioeconomic circumstances in which people live, our population-based approaches to improving health have been inequitable and therefore, potentially contribute to the social reproduction and institutionalization of health disparities. In this paper, we (1) define the scope of tobacco-related health disparities (TRHDs); (2) critically review three population-based approaches—Medicaid, the U.S. Preventive Health Service Task Force, and the Family Smoking Prevention and Tobacco Control Act—that could potentially eliminate TRHDs; and (3) discuss discusses their potential role in reducing tobacco use and lung cancer disparities. Although other population-based approaches exist, we selected these three because we believe that at present, if used appropriately, they could have the greatest potential to extinguish the tobacco cinders in marginalized communities at critical points during tobacco use and exposure, defined later in the paper as the tobacco continuum. These critical points provide important in-roads for evidence-based population-based approaches that show the most promising results. For example, a ban on menthol in cigarettes may have the greatest impact on the smoking prevalence of African-Americans who predominately smoke menthol cigarettes.

Defining the Scope of Tobacco-Related Health Disparities

To begin this discussion, in 2002, Carter-Pokras stated that disparities should be conceptualized as a chain of events signified by differences in the environment; in access to, utilization of, and quality of care; differences in health status; or in a particular health outcome that warrants critical examination. She further asserted that the differences in health should be evaluated in terms of inequality and inequity, because what is unequal is not necessarily inequitable [10]. Braveman (2006) subsequently stated that health disparities/inequalities are *avoidable* differences in health or important differences that are amenable to policy change. She further stated that health disparities are differences in which a social group (such as the poor, racial/ethnic minorities, women, or other groups) that has consistently experienced social disadvantage or discrimination systematically experiences worse health or greater health risk than a more advantaged group [11]. Further, Whitehead (2006) stated that "inequity" implies a moral and ethical judgment in relation to health, a position that requires critical examination of the causes of health inequities and the determination that they are unjust [12]. Healthy People 2000, 2010, and 2020 all established an overall goal to eliminate health disparities [13], yet we are still seeking to achieve that goal as we prepare for Healthy People 2030.

Building on these prior definitions, the first comprehensive definition of tobacco-related disparities was developed by the planning committee of the National Conference on Tobacco and Health Disparities: Forging a National Research Agenda to Reduce Tobacco Related Health Disparities. Conference participants defined tobacco-related disparities as "differences in patterns, prevention, and treatment of tobacco use; the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups in the U.S.; and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure" [14]. Fagan and colleagues [15] later modified the definition to capture more details about patterns of the tobacco use that impact prevention and treatment—that is, differences in what is called the tobacco use continuum: exposure to tobacco, tobacco use initiation, current use, number of cigarettes smoked per day (cpd), quitting/treatment, relapse, and health consequences. In addition, the authors specified that differences in capacity, infrastructure, and access to resources include differences in access to care, quality of health care, socioeconomic indicators that impact health care, and psychosocial and environmental resources [15]. When this definition

was developed, there was an underlying assumption that TRHDs were not mere differences between groups. Many people are born into groups who have historically been poor, marginalized, and/or systematically discrimination against resulting in cumulative disadvantage over the lifecycle. The 1998 Surgeon General Report, *Tobacco Use Among Racial/Ethnic Minority Groups* [3], and the 2017 National Cancer Institute Monograph, *A Socioecological Approach to Reducing Tobacco Related Disparities* [4••], describe these disparities in greater detail, many of which have not changed since they were documented in the 1998 report [3].

Therefore, the fundamental assumptions underlying our definition of TRHDs are that TRHDs (1) are not mere differences between groups along the tobacco use continuum because what is unequal is not necessarily inequitable—a difference may suggest that one group is more *vulnerable* to tobacco use than another; (2) are associated with social determinants of health such as poverty, marginalization, and civil rights, which make the observed differences inequitable; (3) are cumulative across the life cycle, representing a chain of events, often beginning with social indicators of disadvantage; and (4) result from historical social injustices (e.g., being uninsured) that are avoidable and can be eradicated with policies that target the health indicator itself (e.g., lung cancer incidence) or the social determinants (e.g., poverty, discrimination) associated with the disparity. The next section describes key policies that could potentially eliminate TRHDs.

The Promise of Tobacco Cessation through Medicaid

Since the War on Poverty was declared by Lyndon B. Johnson in 1964, poverty, as a social determinant of health, decreased from 14.9% in 1964 to 10.7% in 2017 among whites; 41.8% in 1966 to 21.2% among African-Americans; 10.1% in 2002 to 10% in 2017 among Asians; and 22.8% in 1972 to 18.3% in 2017 among Hispanics [5]. Annual data are not reported consistently for Native Hawaiians and other Pacific Islanders and American Indians and Alaska Natives. In 2017, 15.4% of Native Hawaiians and other Pacific Islanders [16], and in 2016, 26% among American Indians and Alaska Natives lived in poverty [17].

In 1965, President Johnson, through Title XIX of the Social Security Act, signed into law Medicaid and Medicare [18]. The US federal government began providing hospital, post-hospital extended care, and home health care coverage to most Americans aged 65 or older and the uninsured due to retirement. This act granted states with the option of receiving federal funding for providing health care services to low income children, their caretaker relatives, the blind, and individuals with other disabilities. In 2017, Medicaid covered 75,000,000 persons (1 in 5 people) who are low income, pregnant, individuals with disabilities, and those in need of long-term care [19].

Cigarette smoking accounts for 15% of Medicaid expenditures [20]. Data show that in 2017, the prevalence of cigarette smoking was 25.3% among Medicaid enrollees compared to 11.8% among the privately insured [21]. The Public Health Service (PHS) Guidelines for *Treating Tobacco Use and Dependence* indicate that insurance coverage for tobacco cessation treatments can increase quit attempts, use of cessation treatments, and successful quitting [22]. As a result, the tobacco control community has focused on expanding Medicaid coverage to address smoking cessation among the poor, which has been a goal of Healthy People since the publication of the PHS guidelines.

In 2008, only six states had comprehensive Medicaid insurance coverage for the treatment of tobacco use dependence. Comprehensive coverage includes individual counseling, group counseling, and seven FDA-approved cessation medications (i.e., nicotine patch, gum, lozenge, spray, inhaler, bupropion, and varenicline). Although Medicaid programs in all 50 states and the District of Columbia covered some cessation treatment, as of July 2017, only 12/50 states (California, Connecticut, Indiana, Maine, Massachusetts, Minnesota, Missouri, New York, Ohio, Vermont, Kentucky, South Carolina) covered all nine evidence-based cessation treatments [23••]. Although the Affordable Care Act requires benefits, Medicaid's inclusion of comprehensive tobacco control treatments has failed. This failure is due to variations in the administration of the required benefits such as the availability of appropriate counseling, differences in the co-pays associated with treatment, and restrictions associated with prior authorizations needed to access cessation medication or services. Twenty years have passed since the 2008 PHS guidelines were developed. Healthy People 2010 and 2020 also recommended comprehensive coverage for tobacco cessation treatment [24], and we are far from the endgame of reducing tobacco use among the poor. When such policy progress is slow, what new approaches should the field take?

Title VI of the Civil Rights Act of 1964 protects persons from discrimination in programs and activities that receive federal financial assistance. Poor citizens have been denied coverage of comprehensive evidence-based tobacco cessation treatments that could prevent them from getting lung cancer, and Medicaid patients face barriers to accessing cessation treatment such as prior authorization requirements, annual and lifetime limits on quit attempts, required copayments, counseling required for medication, stepped care therapy, and limits on duration [23••]. Medicaid has not sufficiently made recipients aware of the availability of existing resources that could potential improve their health. Medicaid receives federal funding, and therefore, these discriminatory practices against the poor could potentially be framed as a civil rights issue with litigation levied against state and federal insurers.

Complimentary to this strategy, it may be important to further examine systems other than Medicaid that reach the poor. Programs such as the Supplemental Nutrition Assistance Program; Welfare to Work; Social Security; and Women, Infant, and Children can implement tobacco cessation treatment for its participants who receive regular benefits if there are tobacco cessation treatment navigators available in these systems. These alternative actions can be done while pursuing a legal case that takes into consideration basic civil rights for the poor.

The Promise of Expert Researcher Screening Recommendations

Not only does access to tobacco cessation treatments through health insurance matter, but also recommendations for cancer screening influence what preventive health screenings health insurers cover, for whom and when. The U.S. Preventive Services Task Force (USPSTF) was created in 1984 as an independent, volunteer panel of national experts who make evidence-based recommendations about clinical preventive services [25]. In 1998, the Agency for Healthcare Research and Quality (AHRQ) was authorized by the US Congress to convene the USPSTF and to provide ongoing scientific, administrative, and dissemination support. The USPSTF is charged to make their recommendations based on a rigorous review of existing peer-reviewed evidence that help to guide primary care clinicians and patients about preventive services to address health issues [25]. Once the USPSTF makes a recommendation, then insurance companies, including Medicaid and Medicare, and clinicians tend to follow their recommendations.

In 2013, the USPSTF recommend annual lung cancer screening with low-dose computed tomography (LDCT) in adults aged 55 to 80 years with a 30 pack-year smoking history and who currently smoke or have quit within the past 15 years. In the USPTF discussion section of the Burden of the Disease, there is no discussion of the well-known disproportionate burden of lung cancer among African-Americans [26]. Currently, the lung cancer screening recommendations are being updated and are guided by specific questions (e.g., Does the *effectiveness* and *accuracy* of screening for lung cancer with CT differ for subgroups defined by age, sex, race/ethnicity, presence of comorbid conditions, or risk for lung cancer?). How one frames the questions matters. An important question that has not been raised is do the recommendations exclude those who are at highest risk for lung cancer?

For example, African-Americans are more likely to smoke on average 10 cigarettes per day [3], which is not a new phenomenon for these groups. African-Americans also have later onset of regular smoking [3, 4••]. Data show that African-Americans and Native Hawaiians have an elevated risk for lung cancer even among those who smoke 10 cigarettes per day compared to whites and Japanese who smoke 10 cigarettes per day [27]. African-Americans have consistently had the highest lung cancer incidence and mortality rates [3, 28], and at younger ages (e.g., 40–54) are two to four times more likely to be diagnosed with lung cancer than whites [3, 4••]. Thus, the age and pack-year requirements increase the likelihood that many African-Americans will be ineligible for lung cancer screening. This evidence existed prior to the development of the USPSTF recommendations.

Subsequent to the recommendations, recent studies have documented what we already knew prior to the establishment of these guidelines. African-Americans are more likely to have early age of onset of lung cancer (age 45 to 54) as compared to whites [29••]. African-Americans are more likely to be diagnosed at advanced stages of lung cancer compared to Whites [29••]. While it may be feasible to recruit African-Americans to lung cancer screening, they are less likely to qualify [29••, 30, 31••]. Medicare eligibility criteria for lung cancer screening do not align with estimated risk for lung cancer among Blacks and Hispanics [32]. Data show that African-Americans could benefit the most from lung cancer screening (hazard ratio [HR], 0.61 vs. 0.86) [33]. Therefore, it is perplexing that a recommendation was made that largely excludes those from screening recommendations who would benefit the most. African-Americans also have unexplained higher risk for breast, prostate, and colorectal cancer, yet the screening guidelines are not designed to benefit their health [25]. As a result, many insurance companies will not cover the costs for early preventive screening that are not aligned with the USPSTF recommendations.

So, what should we do to eliminate inequities in preventive screenings? Could a legal case be developed based on civil rights? Who should be the targets of that case—the USPSTF; the federal government who convenes, supports, and follows their recommendations; and/or insurance agencies who follow the USPSTF recommendations that are inherently flawed for people of color and other marginalized groups? In this case, a class action lawsuit may focus on inequities in eligibility for lung cancer screening and breast, prostate, and colorectal screening. Legal action has made a difference in tobacco prevention and control in the USA resulting directly or indirectly in the creation of the Flight Attendants Medical Research Institute (FAMRI) [34], ban on smoking on flights, and the Master Settlement Agreement of 1998, which brought down billboards and provided the states with funding that still exists [35].

A complimentary approach might be to increase the diversity and inclusion of expertise on the USPSTF, a strategy that we have consistently advocated for to influence decision-making related to the nation's health. Voluntary as opposed to deliberate diversity approaches have failed. To compliment this strategy, there should be a second Health Disparities Task

Force who examines the recommendations from a health disparities lens. In addition, a professional organization should serve as a "watchdog" organization. For example, the American Lung Association grades states on comprehensive tobacco control efforts; a watchdog organization could grade the USPSTF on their efforts to make recommendations that we know could have a powerful influence on reducing TRHDs and achieve Healthy People goals.

The Promise of the Family Smoking Prevention and Tobacco Control Act

Finally, many of us have hope that the Family Smoking Prevention and Tobacco Control Act can help to eliminate TRHDs, but the evidence has not yet unfolded. In 2009, the Family Smoking Prevention and Tobacco Control Act (FSPTCA), which gave the Food and Drug Administration (FDA) the authority to regulate the manufacturing, marketing, sales, and distribution of tobacco products in the USA, was passed under the administration of President Barack H. Obama. However, during the development of this bill, key language related to a ban on flavored cigarettes excluded a ban on menthol-flavored cigarettes. Menthol cigarette smoking is disproportionately high among youth, African-Americans, Native Hawaiians, women, the poor, and LGBTQs (lesbian, gay, bisexual, transgender, queer) [4••, 36, 37].

Following the passing of the FSPTCA, the baton was passed to the FDA to evaluate the potential harms of menthol in cigarettes to the public's health, resulting in two key reports. In 2011, the FDA Tobacco Products Scientific Advisory Committee recommended that menthol cigarettes be removed from the public health market [38]. The second independent report developed by the FDA, similar to the TPSAC report, concluded that menthol in cigarettes increased the risk for smoking initiation and addiction among youth, and quitting difficulty, particularly in African-Americans [38, 39]. Further, the World Health Organization recommended a ban on menthol cigarettes and menthol analogues, precursors and derivatives [40••]. Despite the recommendations from these reports, no action was taken to remove menthol flavored cigarettes and other flavored tobacco products from the US public health market.

Other countries, such as Turkey, Maldova, Ethiopia, Brazil, and Canada, have banned menthol flavored cigarettes, although what a "ban on menthol cigarettes" means is still unclear and inconsistent across countries [41]. US states and localities have also moved forward to ban the sales of menthol and other flavored tobacco products (e.g., cigars, electronic cigarettes). Without the civil right to vote, granted through the Voting Rights Act of 1965, no such action would have been possible. For example, the city councils in San Francisco, Oakland, and Richmond, CA banned the sales of all flavored tobacco including menthol. Through litigation, tobacco industry challenged the decision in San Francisco in 2017, which forced the decision to a referendum known as Proposition E in 2018. Although RJ Reynolds poured nearly $12 million to support a vote of "no" against the ban, citizens voted and the referendum passed with a 68% "yes" vote, banning the sales of flavored tobacco, including menthol in San Francisco [42]. Tobacco control experts, including Dr. Phillip Gardiner and Dr. Valerie Yerger of the University of California San Francisco and Carol McGruder of the African-American Tobacco Control Leadership Council, and many other supporters of the San Francisco Kids versus Big Tobacco Campaign played a critical role in getting this referendum passed [43]. Other states are now seeking similar bans.

On November 9, 2018, the FDA announced that it *intends* to ban the sales of menthol cigarettes and cigars. The FDA Commissioner Scott Gottlieb has stated that the FDA will publish a Notice of Proposed Rulemaking, not a final rule, that would seek to ban menthol in cigarettes and cigars [44••]. The proposed policy seeks to exclude menthol, mint, and tobacco electronic cigarette (e-cigarette) products from any additional regulation. The scientific rationale for not proposing a ban on menthol flavor in all tobacco products including cigars of any kind, pipe tobacco, smokeless tobacco, e-cigarettes in any form, and any emerging forms of menthol flavored tobacco product like IQOS is unclear. The FDA's proposed language is the same language that was used when the FSPTCA was passed in 2009. For example, take the argument that switching as a harm reduction strategy is the reason for proposing to leave non-combusted menthol flavored products on the market. If this is true, there must be scientific evidence to support that people are switching from menthol cigarette to menthol e-cigarettes and that the switching actually reduces harm in its users, right? The FDA has clearly stated that their decisions are based on science and law [45]. Yet, there is no evidence that menthol-flavored e-cigarettes play a role in harm reduction, a greater role in switching than crème brulee flavor, that users will completely switch from menthol cigarettes to menthol e-cigarettes or will reduce youth use of e-cigarettes. African-American, youth, women, LGBTQ, and poor communities, those disproportionately impacted by menthol flavor, have not asked FDA for a harm reduction remedy, but they have asked FDA to ban all flavored tobacco products including menthol, based on sound scientific evidence related to its addictiveness and negative impact on quitting. Is it ethical for a proposed rule to leave a flavorant on the market that is used disproportionately by many communities with cumulative disadvantage and historical and avoidable injustices? Policies with loopholes can contribute to the cycle of and institutionalization of addiction in already disadvantaged communities. Overall, how the

FSPTCA will influence the elimination of TRHD is still unknown.

Conclusions

In sum, this paper defines the scope of TRHDs and key population-based approaches to eliminating health disparities—Medicaid, which would provide mandated insurance coverage for tobacco cessation services; the U.S. Preventive Health Services Task Force, which would provide for adequate screening; and the Family Smoking Prevention Tobacco Control Act, which gives the FDA the authority to ban harmful additives in cigarettes. As stated earlier, we review these three because we believe that if utilized appropriately, these approaches have the greatest potential to extinguish the tobacco cinders in marginalized communities along critical points along the tobacco use continuum. However, our progress to eliminate TRHD has not been slow just because of the socioeconomic circumstances in which people live; policy makers and experts in the field have failed to take remedial action, using the existing scientific evidence-base, that could help eliminate TRHDs. In 1964, the Surgeon General and the SGAC missed the opportunity to avert future disparities. Our current policies appear to follow this same pattern established in 1964.

Our progress to eliminate TRHD will continue to be slow unless a new lens is adopted that influences the implementation of evidence-based approaches. This is not a mere issue of implementation science but the will of decision-makers at the micro- and macrolevels. There is still considerable debate among researchers about specific actions to reduce TRHDs. Some suggest a watchful waiting approach, others a proactive approach, and some, no approach at all. Watchful waiting means that we continue to advocate that states cover comprehensive tobacco control via Medicaid with the hope that this approach will eventually work. A proactive approach would be to pursue litigation related to the civil rights of marginalized groups who systematically are denied health benefits that would help to eliminate disparities. It is unclear who would pursue a legal case as different organizations and entities (e.g., Attorney generals in case of Master Settlement) have led this effort in the past depending on their strengths. In the case of the USPHSTF, watchful waiting would be to continue to let the Task Force move forward in its current way, while proactive efforts might include litigation and the formation of a second, not secondary, committee who would hold the Task Force accountable for inclusivity, as part of its recommendations for lung cancer screening. Watchful waiting related to the FSPTCA means that we continue to use the current methods to influence regulatory action through research and submissions to the federal docket. A more proactive approach would be to pursue local and state legislation that would have greater impact than FDA.

Finally, despite over 50 years of progress in reducing tobacco use and exposure in the USA, many communities are left behind in the cinders of tobacco combustion that results in cancer, cardiovascular disease, stroke, respiratory disease, and other chronic and acute conditions. When local, state, and federal government; private industry; and decision-making bodies have not done their job to help eliminate TRHD, then the citizens and voluntary and professional organizations must demand more and consider civil rights litigation as part of its strategy. Eliminating TRHD is not just a health or social justice issue; it is a civil rights and ethical issue that deserves immediate attention to improve the health of our nation.

Compliance with Ethical Standards

Conflict of Interest The authors declare that have no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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