

INTRODUCTION

Preventive Medicine

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Globally, we have learned how essential the field of preventive medicine is to preventing incidence of disease, averting devastating health outcomes, and complications after disease onset in order to maintain a functioning society [1]. Viewed as silent beneficial work, preventive medicine is often taken for granted, especially in Western society which benefits from fluoridated water systems, functional sanitation services, quality access to nutritious food, and robust vaccination programs [2].

The overall objective of preventive medicine is to ensure the elimination of disease, either by preventing the chances of disease occurrence or by halting a disease and mitigating the resulting complications after its onset [3].

This issue comes at a time where for the first time in a century, our world has re-learned basic public health measures such as handwashing and embraced new terms such as social distancing and mask wearing. In the past when thinking about prevention of disease many looked towards individual efforts as the way to avert health outcomes. However, the COVID-19 pandemic has taught us the importance of collective health measures and motivating individuals to build a public health mindset for their local community and beyond. Though it has been a challenging journey for us to learn the importance of collective health measures, it has also taught why preventive medicine and public health are such vital fields to our everyday life which rely on policy development, planning, and assessment.

So, how does one practice preventive medicine? We

see in two interviews within this issue how preventive medicine is multidisciplinary, covering a wide range of fields. Dr. Nebert emphasizes the role of preventive medicine in preventing disease due to foreign chemicals, a focus of study for his field of environmental genetics. Dr. Nebert describes how studies from the bench assist in understanding the interaction between chemicals from the environment and the role of CYP1 in the cell allow for better prevention of cancers from toxin exposure [4]. Outside the laboratory, we hear from Dr. Altice about the limitations of carefully designed experiments and clinical trials in understanding how well evidence-based practices work in the real world and thus shows the importance of community outreach. He shares lessons he learned from various programs he is a part of, such as the Community Health Care Van and the HIV in Prisons Program, in order to address gaps in our healthcare system affecting some of the most vulnerable members of our communities. From these anecdotes we can begin to appreciate the amount of work and knowledge required for preventive medicine.

This past year has shown how medical mistrust among minorities does have an impact on preventive measures and practices [5], though the topic of medical mistrust is complex, our issue explores how the act of racism, not race, has played a role in the health of individuals in the past, present, and future. More importantly, how can we combat acts of racism in medicine through various modalities?

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Calhoun takes on the concept of teaching “the historical and current underpinnings of racism” in medical education as a way of preventing childhood trauma among Black children in her piece *Medical Education Must Start Teaching About Racism*. She further mentions, “The trauma of racism is not inflicted by one person but is imposed by an entire system. It is a trauma that is often explained away or hidden, despite beginning at a terrifyingly young age.” With this in mind, we can further explore the impact of systematic level racism in medicine by looking at the American Medical Association’s Center of Health Equity piece on *Race, Racism, and the Policy of 21st Century Medicine*. This in-depth piece discussing how the organization “for the first time in its 174-year existence, passed an historic suite of policies decrying the harms of racism in healthcare and across social realms that impact health” and how the organization now “cements its core commitment to advancing health equity, particularly in medical education, healthcare delivery, research, and practice [6].”

There are also topics within this issue that are at the center of preventive medicine such as firearm prevention. As Abdallah and Kaufman describe in *Before the Bullets Fly: The Physician’s Role in Preventing Firearm Injury*, firearm injury is a “life-changing event” with drastic long-term repercussions in both physical and mental health and thus argue that it is an important issue for physicians to tackle. They provide a well-informed perspective on how doctors can intervene and prevent injury. Firearm prevention is also an issue beyond the United States [7], as Omoke and Lasebikan report the prevalence and pattern of injury in patients under the age of 19 in Nigeria. As noted in both articles, the distribution of causes vary from region to region and thus will require tailored preventative measures and a strong need for increased research into firearm injury in order to determine exactly which programs will work in reducing morbidity and mortality.

Advocating for marginalized communities with a reduced voice in policy making, those who have a diminishing capacity from disease or age, and children who have yet to develop that capacity lie at the heart of preventive medicine. As it is important to advocate for those who cannot advocate for themselves. On this topic, we have Teh et al. which focused their attention on a multi-ethnic population of adults in Singapore at 60 years of age and older to identify risk factors and potential ways of preventing dementia. Their finding that those with mild cognitive impairment have disability, depression, and anxiety emphasize the importance of serving this population. On the other end of the age spectrum, Jha and Kraguljac in *Assessing the Social Influences, Self-esteem, and Stress of High School Students who Vape* studied the connection between stress and vaping in high school students, with implications on how to prevent vaping and thus

other potential long-term health consequences, such as the beginning of a nicotine addiction. On a broader scale, Vaughn and DeJonckheere review the influence of social and environmental contexts in developing resilience in young children in light of adverse events and how the application of Social Ecological Resilience can promote health through childhood and beyond.

The impact of COVID has transformed how health policy is not only done within the United States, but all across the world with mandatory lockdowns [8]. Calderon-Anyosa et al. highlight the etiologies of non-external and external deaths in relation to the COVID-19 lockdown in Peru. They mention how countries around the world have used lockdowns as a “primary non-pharmaceutical intervention” in order to mitigate deaths due to the virus and the initial lockdown had decreased external etiologies of death, such as homicides, suicides, and traffic accidents. Over in Iran, Behzadifar et al. examined how the lockdown helped to increase social distancing compliance and overall decrease deaths within the country.

Finally, one of the most important aspects of preventive medicine utilizes the field of epidemiology to help identify risk factors that can result in morbidity or mortality. For example, Shojaei et al. studied the relationship between quality of life and risk factors for postpartum depression in Iranian women. McElfish et al., *Undiagnosed Hypertension and Undiagnosed Type 2 Diabetes among Overweight and Obese Marshallese Participants in a Diabetes Prevention Program*, examined the association between undiagnosed hypertension and Type 2 diabetes with factors such as age and healthcare access in Native Hawaiian and Pacific Islanders. As the authors note in their respective articles, such results are important for the development of appropriate interventions for prevention and mitigation. An understanding of risk factors allows for the implementation of screening programs and technologies. For example, identification of amblyopia at an early age is crucial to prevent worsening visual impairment and Sopeyin et al. provide a detailed overview of current tools used for screening as a guide for practicing physicians. It is also important to evaluate the efficacy of such interventional programs as well. Dursun et al. here report an evaluation of the implementation and knowledge of pre-participation screening in athletes in Turkey, an important measure for the prevention of sudden death and discuss the importance of education, standardization, and regulation. This importance of standardization and regulation is a topic covered by Dr. Roy in his analysis studying the history of state medical boards and their role in patient safety. Thus, we see the vast scale necessary to fully practice preventive medicine.

We are hoping this issue will take you on a journey through the different facets of preventive medicine from

the well-established community outreach measures, epidemiological studies from across the world, to re-imagining how to combat racism in the world of preventive medicine. This issue will allow you to see the importance and silent beneficial work preventive medicine provides to create a better world for all of us.

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