Impact of COVID-19 on Behavioral Health Issues for Boys and Men

Clinical Considerations

An Expert Panel Report from Men's Health Network

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Disclaimer
The content of this monograph and any recorded representation of comments and opinions of the conference attendees does not necessarily represent the views of PCORI, Men's Health Network, or panel members' organizations, their directors, boards of governors, or any other organization officers or representatives.

Forwards

Forward by Men's Health Network

On behalf of Men's Health Network (MHN), we are proud to have partnered with the Patient-Centered Outcomes Research Institute (PCORI) to convene this important Virtual E-Conference program on November 6, 2021, and to present this report based on the proceedings. This is the first in a series of three planned monographs.

This monograph focuses on the behavioral health and psychosocial issues that are related to the clinical aspects of the COVID-19 pandemic. Managing the behavioral health challenges faced by America's boys and men is a significant challenge. This already complex and multi-faceted problem in male care is made even more challenging in the face of our national and global response to COVID-19. We are also beginning to see potential longer-term impacts to clinical care because of COVID-19 as we learn more about so-called COVID-19 Long Haulers syndrome and the belief that this virus will become endemic.

This unprecedented event in human history has touched every aspect of living including health care and sociologic interactions of all the world's citizens. Our goal in organizing this program was not just to facilitate a vigorous discussion of the issues but also to identify important areas to pursue to address the immediate issues that drive the clinical and psychosocial needs of boys and men but also the long-term needs. We hope these discussions and expert opinions will not only help in the immediate challenges in male behavioral health but also help for better planning and policy for inevitable future national and global health emergencies. This is all a work in progress and the final chapters in assessing our response, the impact on behavioral health issues in our male population and optimized ways to approach pandemics have yet to be written and assessed. We hope that the information and recommendations within this monograph help address these needs.

This unprecedented event in human history has touched every aspect of living including health care and sociologic interactions of all the world's citizens.

PCORI supports myriad projects and research programs that help patients and those who care for them make better informed health care choices, including choices in the area of behavioral health. Men's Health Network gratefully acknowledges PCORI for providing the resources and support.

Men's Health Network Staff

Forward By PCORI

PCORI funds research that can help patients and those who care for them make better-informed decisions about the health care choices they face every day, with that research guided by those who need the information most. We also support projects that encourage the active integration of patients, caregivers, clinicians, and other health care stakeholders into all aspects of the patient-centered outcomes research (PCOR) process.

This conference by Men's Health Network—which brought together community leaders, policymakers, thought leaders, men's health activists, academic researchers, and clinicians, among others—aligns with PCORI's mission. Too often in conducting research and in identifying research priorities, patients and other groups with valuable perspectives are left sitting on the sidelines. Conferences like this one, where everyone has a seat at the table, result in a more robust and complete discussion where everyone's voice is heard. The research agendas and, ultimately, the research that results from such conferences are generally more relevant to patients and more likely to be taken up in practice.

Because PCORI also strives to devote resources to reducing health care disparities, we hope the lessons learned from this conference will lead to continued dialogue and, ultimately, to PCOR that can help males and those who care for them make better-informed choices to manage their mental and behavioral health. PCORI commends all the conference's participants and hopes this report will foster continued engagement of all stakeholders in the health care community—not just clinicians—to discuss what can be done to give patients and those who care for them the tools they need to take charge of their health.

PCORI Staff

Forward by Project Principle

Since the initial planning of this program on the general issues of community interventions in behavioral health, our world has been dealing with the pandemic of our lifetimes: the novel coronavirus (COVID-19). This pandemic has produced another pandemic, one of anxiety, depression, isolation, uncertainty, and fear.

These emotional and mental health issues have led to an increase in behavioral health problems, substance abuse, violence at home, and so many other conditions which have exacerbated an already difficult situation for everyone—but especially boys and men.

Men's Health Network has convened three separate extension conferences (funded in part by PCORI) to examine the specific issues involved in COVID-related mental health issues in men.

When MHN Board of Scientific Advisors and staff examined the impact of this pandemic, it became apparent that the introduction of the novel coronavirus in the last months of 2019 has now erupted into three interrelated pandemics: clinical impacts of the COVID-19 infection; the inadvertent economic virus mitigation strategies (such as shelter-in-place order and mandatory closing of restaurants and many businesses), and;

the disparate impact COVID-19 has had on vulnerable and minority communities.

address the current situation but also will help us be better prepared for the next time the global community will have to address a similar—or

It became apparent that the introduction of the novel coronavirus in the last months of 2019 has now erupted into three interrelated pandemics: clinical impacts of the COVID-19 infection; the inadvertent economic and financial devastation caused by necessary virus mitigation strategies (such as shelter-in-place order and mandatory closing of restaurants and many businesses), and; the disparate impact COVID-19 has had on vulnerable and minority communities

Each of these interrelated and financial devastation caused by necessary pandemics presents unique challenges in terms of management and mitigation efforts, and each has had a profound effect on the emotional (and physical) wellbeing of the hundreds of millions of people across the globe who have been affected.

MHN has been granted funding by PCORI to expand our inquiry and expert dialogue into the general topics of behavioral health in boys and men in America and to take an in-depth look at each of these interrelated pandemics and how they have affected the emotional wellbeing of boys and men. This funding has also enabled MHN to (1) provide insight and expert opinion on the best approaches to resolving COVID-related issues, and (2) to explore areas for future outcomes-oriented research that will not only

worse—crisis.

This is the first in a series of three reports in this highly important area. It is the intent and hope of all involved that the information, recommendations, and key action we present will help both those involved in community leadership positions and family members better understand what needs to be done, how to better do it, and how to disseminate important information about the results of their work. The proceedings of each of these three COVID-19 related behavioral health programs will be published and posted on the Men's Health Network website (www.menshealthnetwork.org) in the coming months and disseminated widely via social media, op-eds, articles, and expert media appearances.

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Executive Summary

Men's Health Network (MHN) was established in 1992 and is a national nonprofit organization whose mission is to provide health awareness and disease-prevention messages and tools, screening programs, educational materials, advocacy opportunities, and patient navigation to men, boys, and their families where they live, work, play, and pray. PCORI provides grants and other types of funding to support programs that help people make informed health care decisions and seeks to improve health care delivery and outcomes by producing and promoting high-integrity, evidence-based research guided by patients, caregivers, and the broader health care community.

Program

The authors based this report on an expert panel convened by MHN and partially funded by the Patient-Centered Outcomes Research Institute (PCORI) Engagement Award Initiative (EAIN00095). Out of concern for public health safety, this conference was held electronically on November 6, 2020. The professionally moderated panel brought together a broad cross-section of experts from private and public entities involved in behavioral health issues, research, and care delivery, particularly as they pertain to males. The subject area was entitled *"The Impact of COVID-19 on Behavioral Health of American Males: Clinical Considerations"* The conference was structured to examine what is now known about the impact of COVID-19 on clinical care, evolving areas of concern, and the best ways society can boys and men deal with COVID-19 related mental-health issues.[1]

This discussion is unique not only because of its focus on the vastly understudied concerns of boys and men, but also because it's being held in the midst of an unprecedented global medical crisis. As with any new and evolving medical situation, there are many hypotheses; some observations, some hard data, and perhaps too much speculation. Since the effects of the novel coronavirus on humans are as yet not fully understood, there is no way to accurately predict either the potential long-term pathophysiologic effects it may cause or how those effects will affect the future functioning of our society and their impact on mental wellness. For this reason, panelists were encouraged to use their knowledge of the overall clinical and clinical mental health care issues we're facing now as a basis for informed predictions about what we may be facing after a nationwide vaccination campaign and beyond. Recognizing the absence of adequate data and statistics, we also asked the panelists to recommend and discuss key actions that could be taken now and what outcomes-oriented research projects are needed.

[1] Giorgianni, S.J., Brott, A. (2019). Behavioral Health Aspects of Depression and Anxiety in the American Male: An Expert Panel Report. *Men's Health Network*. Retrieved January 2020 from https://www.pcori.org/sites/default/files/Mens-Health-Network-Conference-Summary.pdf

Much of this discussion builds on the understanding of the unique behavioral health issues faced by males and has been covered in depth by MHN in the core publication, "Behavioral Health Aspects of Depression and Anxiety in the American Male: Identifying Areas of Patient-Centered Outcome–Oriented Needs, Practices, and Future Research," ((https://www.menshealthnetwork.org/library/depression-anxiety-males-report-summary.pdf)) as well as its companion material, "Determining the Efficacy and Scope of Behavioral Health, Gender-Specific Screening Tools for Males Benefitting Front Line Community Workers."

Panel Discussion Summary

As mentioned above, the panel focused on the behavioral health ~~if~~ of boys and men and on delivering services within community settings. For the purposes of the day's discussions (and the publications that follow), we defined the phrase *community involvement* as "multi-entity and multi-sector partnerships that emphasize the pivotal role of community members in interventions, programs, and public policies." As such, community involvement may or may not have direct links to clinical or social services partnerships, but most on the panel believed that these partnerships are of importance in providing triage of boys and men at risk into care services. The panel engaged in a broad range of issues surrounding the clinical impact that the COVID-19 pandemic has had on overall ability to deliver health care to boys and men in America and how these clinical challenges have impacted their overall behavioral health and psychological wellbeing. There is a general acknowledgement and understanding by all involved that many of the issues and concerns are not exclusive to male health care but that the focus of the discussions were on many of the salient parameters that make delivery of health care and the identification and management of behavioral health issues for boys and men so challenging.

The panel addressed 12 broad themes during the discussions. These are:

- Impact of Pandemics on Clinical Care and How the COVID-19 Pandemic Is Different
- The Significance of Psychosocial Dynamic Changes Required By Infection Mitigation Strategies
- How Mitigation Strategies Have Blunted Community Responses to Support Neighbors and Networks
- How COVID-19 Has Increased The Awareness of Systemic US Health Care And Public Health Inadequacies and Systemic Racism
- The Importance Of Activating Gender and Segmented Communications and Trusted Messengers
- Male Gender as a COVID-19 Risk Factor and Its Unique Impact On The Clinical Care and Mental Health of Boys and Men
- Pandemic Impact on Healthcare Workers And Their Clinical Training
- Impact on Clinical Care Due To Fear And Mitigation Driven Health Service Curtailments
- How COVID-29 Challenges to Conducting Clinical Trials and Basic Research
- The Current and Future Roles of Technologic Tools Such As Telemedicine And Virtual-Support Networks
- How COVID-19 Has Exacerbated Substance Abuse Concerns In Boys and Men

- COVID-19 Driven Increases In Male Suicide Across All Populations

Each of these discussion themes were woven into the overall dialogue and formed the basis for developing consensus-driven recommendations.

Next Steps

Based on the discussions during the day the expert panel provided nineteen recommendations for next stapes to take to: better deal with the current pandemic and its immediate aftermath, better prepare and guide decision making for any widespread future medical emergencies and; research issues that should be considered for funding to help enlighten policy and practices. These are:

- More decisively address the broad range of drivers of male morbidity and mortality.
- More decisively address health disparities, lifestyles, and structural issues that have come to light due to COVID-19, particularly in minority communities.
- Encourage and support adoption of newer technologies such as telehealth and remote data monitoring.to deliver health care.
- Assess the impact of these newer healthcare delivery technologies and approaches in general and particularly on their impact on rural and underserved communities or patients with limited in-person access to medical care for any reason.
- Review reimbursement models to ensure that there is reimbursement parity for newer technologies to deliver health care services.
- Create more coordinated national, regional, and local structures and systems for distribution of necessary services and supplies through various public and private distribution channels during broad medical emergencies and pandemics.
- Conduct comparative evaluations of distribution practices for critical services and supplies to end-users to determine optimal efficiencies during broad medical emergencies and pandemics.
- Encourage the use of state-of-the-art impactful market-segmented health messaging approaches that take advantage of techniques used in most other consumer market segments.
- Evaluation of population segmented health messaging, trusted messengers and communications platforms to help guide outreach to people needs to be conducted across population bases.
- Adopt a universal standard to require that scientific study data regarding any and all biomedical research and surveys includes gender stratification, at a minimum, and optimally gender and racial stratification. This data format should be a standard requirement of all peer-reviewed journals and government data reports and should be a key metric requirement of those who fund biomedical and biomedical related research.
- Conduct a 360-type review of public health departments, resources, including funding, technology and manpower to ensure that they eliminate gender disparities and are better able to respond to future widespread medical emergencies.

- Adopt a symptomatology and diagnostic criteria as well as CPT and DSM codes for COVID-Related Post-Traumatic Stress Disorder (CRPTSD).
- Adapt and expand techniques that have been successful in recognizing, mitigating, and treating Post-Traumatic Stress Disorder (PTSD) to CRPTSD.
- Establish and fund an Office of Men's Health in the Department of Health and Human Services (HHS) and analogous entities at the state and local levels to create a focal point for male health. Fulfill the promise to the Native American community by setting up the Office of Indian Men's Health that was authorized in the Affordable Care Act.
- Engage in additional research to better understand the direct and indirect impacts of pandemics on behavioral health issues and neuropsychiatric conditions in men.
- Conduct studies to better elucidate the physiological impacts of potential pandemic capable pathogens on males.
- Evaluate the utility of so-called Virtual Visits and other alternative approaches to in-person visits as a substitute for live-in-person home visits or group meetings for medical peer-to-peer support groups, and social service in-home visits.
- Conduct workforce demographic analysis of health care professions and develop recruitment and financial support systems to address the need for additional minority men in all health care professions.
- Develop professional educational and post-graduate education standards for core curriculum and core competencies in comprehensive men's health care. Incorporate such standards into professional licensure and specialty board certification assessments.
- Engage in through assessment of the impact of school closings, virtual learning, loss of social and safety networks offered within the educational systems must be conducted to better manage educational practices and their impact on the comprehensive psychological wellbeing of school age and college students.

Main Monograph

Conference Background and Support

The following report is based on an expert panel convened on November 6, 2020 by Men's Health Network (MHN), which brought together a cross-section of experts from private and public entities involved in clinical care and health care, advocacy for boys and men. This program, entitled "*The Impact of COVID-19 On Behavioral Health of American Males: Clinical Considerations,"* was in part funded by a supplemental funding program to cover important topics related to the COVID-19 pandemic through the PCORI Engagement Award Initiative (EAIN00095).[2] PCORI has been a leader in providing funding for projects to enhance patient engagement in mental health management and has expanded their funding to help provide important information about better understanding and managing the COVID-19 pandemic. To comply with social distancing and public health safety necessitated by the COVID-19 global pandemic, this conference was held electronically. The contents of this conference and manuscript do not necessarily represent the views of PCORI, its board of governors, or its methodology committee.

This conference builds on an expert consensus panel convened by the Men's Health Network and partially funded by PCORI held in May 2019 (https://menshealthnetwork.org/malebehavioralhealth) and September 2020 that examined in-depth the underlying issues of depression, anxiety, and suicidality in American males and identified key areas to pursue to improve the emotional wellness and care of boys and men.

Defining the Problem

From the bubonic plague in the Middle Ages to the Spanish Flu outbreak near the end of World War I, in 1918, pandemics have had profound effects on society in general and on global and local economies. In

2 Patient-Centered Outcomes Research Institute. (n.d.). Engagement Award: Dissemination Initiative. Retrieved January 2021, from https://www.pcori.org/funding-opportunities/announcement/engagement-award-dissemination-initiative

the majority of recorded accounts of pandemics, the first part of the social order to become strained is the health care system. Since 2003, the international community has been preparing for a potential SARS outbreak of global propositions.[3] However, most experts believed that there were still deficiencies in the world's—and especially the health-care sector's—ability to cope with such an outbreak. These dire concerns and warnings made two-decades ago have proven to be accurate as the world reels from COVID-19.

There is much to learn about how to approach mental health issues associated with pandemics. The literature is filled with information from microbiologic, virologic, clinical, epidemiologic, emergency preparedness and public-health perspectives, but there is a dearth of information about psychiatric care of individuals and communities that are caught up in the traumas and tragedies of a pandemic. Yet, all who deal in this domain agree that the mental health component is extremely important.

In the short term, the emotional trauma of the pandemic can, and should, be addressed with psychological first aid provided by adequately trained mental health providers and augmented by emotional first aid at the community, school, and work environments by community members trained in these simple-but-important techniques. In the long term, many experts and the majority of our panel agree that the approach to treating individuals suffering from pandemic-induced emotional trauma, which may be thought of as COVID-related Post-Traumatic Stress Disorder (CRPTSD), should follow approaches that have been successfully used to help patients with diagnosed PTSD, including both pharmacologic and behavioral interventions, as warranted. The worst thing we can do is to ignore the reality of this trauma.

One of the major challenges to ensuring that all those affected with COVID-related emotional trauma have access to treatment is that, as Jimmy Boyd, a long time advocate for health awareness for boys and men, notes, boys and men typically are much less likely than girls and women to express emotional hurt, needs, and concerns. As a result, they are less likely to recognize their own behavioral health needs, which makes them less likely to seek help for mental health issues. This, in turn, leads to a variety of problems in creating approaches to deal with male mental-health issues both at the clinical and public policy levels.

The fact that males and females generally differ substantially in how they think about and express emotional pain and trauma too often leads to misinterpretations and mismanagement of evolving psychological issues in boys and men. Important factors that influence how male's express emotionality include stigma, society's negative feedback to male expressions of emotional hurt or concern, and the generalized reluctance—and resistance—boys and men must seek care for any reason.

The author of the book, *Psychiatry of Pandemics: A Mental Health Response to Infection Outbreak,* identifies six unique features of mental health responses in pandemic outbreaks, including the following:[4]

- Time lapse and disease modeling of pandemic outbreaks to help guide planning, approaches and progresses.
- Assess and manage the mental health burden on health workers.

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3 Madhav, N., Oppenheim, B., Gallivan, M., Mulembakani, P., Rubin, E., Wolfe, N. (2017). Pandemics: Risks, Impacts, and Mitigation. In D. T. Jamison (Eds.) et. al., Disease Control Priorities: Improving Health and Reducing Poverty. (3rd ed.). The International Bank for Reconstruction and Development / The World Bank.

4 Polšek, D. (2019). Psychiatry of Pandemics: A Mental Health Response to Infection Outbreak: (D. Huremović, Ed.). Springer International Publishing. https://doi.org/10.3325/cmj.2020.61.306

- Begin aggressive and social distancing and plan to address the profound impact that prolonged isolation and separation from families and their community may have. This not only needs to be considered in the context of the population at large but also for health care providers.
- Neuropsychiatric sequelae among survivors may warrant sustained mental health focus and attention including an expansion in resources to prevent and minimize long-term disabilities.
- Behavioral contagion and emotional epidemiology where managing concerns, fears, and misconceptions at the local community and broader public level become as important as treating individual patients.
- Precarious status of healthcare facilities and healthcare workers. In the midst of a pandemic outbreak, unlike in other disasters, healthcare facilities may transform from points of care to nodes of transmission, further jeopardizing public trust in the healthcare system and its ability to respond to the outbreak.

Impact of Pandemics on Clinical Care

The impact of pandemics and widespread epidemics have a profound impact on multiple parts of society. Historical writings about the impact the bubonic plague had both socially and economically on the middle ages provide perspective on both the short and long-term effects on the death of an estimated 75 million to 200 million people in Eurasia and North Africa (30-60% of the population in Europe). Generally regarded as the next largest pandemic, the Spanish Flu of 1918-19, which has been termed "the mother of all pandemics" infected an estimated 500 million people worldwide and killed an estimated 20-50 million globally.[5] While the final chapter on the COVID-19 pandemic is far from being written, few epidemiologists believe that it will be as devastating (in terms of lives lost) as either The Plague or the Spanish Flu. Yet, the impact of COVID-19 has been profound and saddening.

Society and medical practice learned many hard lessons during these cataclysmic events, and as devastating as those two benchmark pandemics were, eventually they were brought under control and adverse impacts were reversed. Additionally, in the case of The Plague, many of the social and economic inequities that existed prior to the

Plagues Throughout Recorded History

The Athenian Plague - 430 B.C

The Antonine Plague - 165-180 B.C.

The Justinian Plague - Mid-6th Century A.C.

The Black Death - 1334-1400 A.C.

Spanish Flu Pandemic - 1918–1920

Smallpox Outbreak in Former Yugoslavia - 1972

HIV Pandemic - early-1980s-ongoing

Severe Acute Respiratory Syndrome (SARS) - mid-2003

Swine Flu H1N1/09 Pandemic - early-2009-mid-2010

Ebola Outbreak - 2014–2016

Zika - 2015–2016

COVID-19 - 2019-ongoing

Disease X* - Postulated placeholder designation adopted by the WHO 2018 represent a hypothetical, unknown pathogen that could cause a future epidemic.

Adapted from "Psychiatry of Pandemics: A Mental Health Response to Infection Outbreak" Huremović, D. (Editor), Springer Press, 2019;

[5] Taubenberger, J. K., Morens, D. M. (2006). 1918 Influenza: the mother of all pandemics. *Emerging infectious diseases*, *12*(1), 15–22. https://doi.org/10.3201/eid1201.050979

outbreak were mitigated after as European society engaged in purposeful restructuring.[6,7]

In a 2017 scholarly review of the impact of plagues and pandemics in Disease Control Priorities: Improving Health and Reducing Poverty, authors Madhav, Oppenheim, and their colleagues point out that:

- Pandemics can cause significant, widespread increases in morbidity and mortality and have disproportionately higher mortality impacts on lower- and middle-income countries and communities.
- Pandemics can cause economic damage through multiple channels, including short-term fiscal shocks and longer-term negative shocks to economic growth.
- Individual behavioral changes, such as fear-induced aversion to workplaces and other public gathering places, are a primary cause of negative shocks to economic growth during pandemics.
- Some pandemic mitigation measures can cause significant social and economic disruption.
- In countries with weak institutions and legacies of political instability, pandemics can increase political stresses and tensions. In these contexts, outbreak response measures such as quarantines have sparked violence and tension between states and citizens.

The ability for a government to manage the impact of pandemics on public health and overall medical care are dependent on a host of core capacity factors, the most important of which are:[8]

- Public health infrastructure capable of identifying, tracing, managing, and treating cases.
- Adequate physical and communications infrastructure to channel information and resources.
- Fundamental bureaucratic and public management capacities.
- Capacity to mobilize financial resources to pay for disease response and weather the economic shock of the outbreak.
- Ability to undertake effective risk communications.

Governments, government agencies, and international networks and organizations such as the World Health Organization (WHO) have been studying the epidemiology of epidemics and pandemics for many decades. A quick search of the internet for the term *pandemic planning* yielded some 15 million hits, many going back to materials developed in response to the Spanish Flu of 1918-19. There are also a wide variety of well-researched, widely published plans, recommendations, and protocols produced by well-respected governmental and international organizations. Anyone who has trained in the medical sciences and/or public health fields has at least some background in the core elements of recognizing and managing epidemics and pandemics. In addition, there are innumerable certification programs available in pandemic recognition, mitigation, and control.

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[6] ***Black Death***. (2010, September 17). History.com. Retrieved January 2020, from https://www.history.com/topics/middle-ages/black-death

[7] Pappas, G., Kiriaze, I. J., Giannakis, P., Falagas, M. E. (2009). Psychosocial consequences of infectious diseases. *Clinical microbiology and infection: the official publication of the European Society of Clinical Microbiology and Infectious Diseases*, *15*(8), 743–747. https://doi.org/10.1111/j.1469-0691.2009.02947.x

8 Greenhill, K.M., Oppenheim, B. (2017) Rumor Has It: The Adoption of Unverified Information in Conflict Zones. International Studies Quarterly, 61(3), 660–676. https://doi.org/10.1093/isq/sqx015

Nevertheless, members of the panel pointed out four overarching lessons: First, every pandemic presents a unique set of circumstances that may or may not be guided by past pandemic profiles and responses; second, global economies and growing individual mobility greatly enhance the potential for future pandemics; third, how a pandemic is managed has profound impact on the economic and psychological wellbeing of people; and fourth, media in the 21st Century has profound positive and negative impacts on public awareness, information dissemination, and management. The panel recognized that while many key action items and research projects may emanate from everything we will have learned from COVID-19, those findings will provide relevant—but not definitive—knowledge when the next global medical emergency occurs.

There is a significant body of scientific knowledge about the impacts and potential impacts that infectious diseases can and are speculated to have on mental health.[9,10,11] Although this topic is much too broad to comprehensively cover in this monograph, infectious diseases are known to cause a myriad of neuropsychiatric symptoms and illnesses. For example: after streptococcal infection, some children may be at increased risk for obsessive-compulsive disorders and Tourette syndrome; a human B-cell associated with poststreptococcal rheumatic heart disease has been tentatively linked to an increased risk for psychiatric illness in children; leptospirosis has been associated with depression, dementia, and psychosis; Spanish Flu survivors reported sleep disturbances, depression, mental distraction, dizziness, and difficulties coping at work; and influenza death rates in the United States during the years 1918-1920 were significantly and positively related to suicide among survivors of the flu. Of the approximately twelve major flu pandemics during the 20th and 21st centuries, neurologic symptoms as varied as delirium, encephalitis, ocular abnormalities, amyotrophy, myelopathy, radiculopathy, ataxia, and seizures have been reported as prevalent comorbidities with probably causality associated with the impact of the primary infectious pathogen on the central nervous system. While it is too early to make associations of this type with the COVID-19 pandemic, the virus is known to penetrate the central nervous system with a rather common early symptomatology of loss of taste and/or smell. Overall, there is no reason to believe COVID infections would not have direct causal relationships to a similar spectrum of neuropsychiatric disorders.[12,13,14] It was clear to the panelists that the scientific community—supported by world leaders—must conduct basic and clinical research to better understand the neuropsychiatric risks to the world population in order to develop and foster better mitigation, recognition, and management of these mental illnesses.

The COVID-19 Pandemic

The government responses to the COVID-19 pandemic have resulted in significant upheaval to everyday life around the world. In the United States, this has involved not only economic and social disruptions but

[9] McSweegan, E. (1998). Infectious Diseases and Mental Illness: Is There a Link?. *Emerging Infectious Diseases*, *4*(1), 123-124. https://dx.doi.org/10.3201/eid0401.980118.
[10] Mamelund, S.E. (2003). *Effects of the Spanish Influenza Pandemic of 1918-19 on Later Life Mortality of Norwegian Cohorts Born About 1900*. Accessed January 2021 from https://www.researchgate.net/publication/5097223_Effects_of_the_Spanish_Influenza_Pandemic_of_1918-19_on_Later_Life_Mortality_of_Norwegian_Cohorts_Born_About_1900.
[11] Henry, J., Smeyne, R. J., Jang, H., Miller, B., & Okun, M. S. (2010). Parkinsonism and neurological manifestations of influenza throughout the 20th and 21st centuries. *Parkinsonism & related disorders*, *16*(9), 566–571. https://doi.org/10.1016/j.parkreldis.2010.06.012.
[12] Hamer, W. H. (1919). Discussion on Influenza. *Proceedings of the Royal Society of Medicine*, *12*, 24–26. https://doi.org/10.1177/003591571901200512
[13] Hayase, Y., Tobita, K. (1997). Influenza virus and neurological diseases. *Psychiatry and clinical neurosciences*, *51*(4), 181–184. https://doi.org/10.1111/j.1440-1819.1997.tb02580.x
[14] Stuart-Harris, C.H. (1966). Influenza and its complications. *British Medical Journal, 1*(5481), 217-218. 10.1136/bmj.1.5481.217.

Social distancing, stay-at-home polices, and other personal mitigation requirements, whether voluntary or imposed by state and local governments with penalties, have led to social isolation and loneliness across sociologic and economic strata. These policies are also, many feel, rapidly reconfiguring family structures, our education system, business models, and overall economic security in a way that makes it nearly impossible for some segments of our society to meet their basic needs for food and shelter. That has triggered a cascade of consequences that may be apparent only years after the virus itself is brought under control.

also disruptions to many of Americans' cherished freedoms as well as a new, more-expansive government role as it attempts to mitigate the spread of the virus while also implementing treatment triage and vaccination policy. The well-publicized infection rate along with the virus's direct and indirect death toll have had a tremendous effect on families, communities, and our country as a whole. In addition, they've caused immeasurable grief, anxiety, and other behavioral health issues and put unprecedented strain on a healthcare infrastructure that was barely adequate to meet the needs of the people, even before being challenged by the virus.

Social distancing, stay-at-home polices, and other personal mitigation requirements, whether voluntary or imposed by state and local governments with penalties, have led to social isolation and loneliness across sociologic and economic strata. These policies are also, many feel, rapidly reconfiguring family structures, our education system, business models, and overall economic security in a way that makes it nearly impossible for some segments of our society to meet their basic needs for food and shelter. That has triggered a cascade of consequences that may be apparent only years after the virus itself is brought under control.

As part of the planning committee for this conference series, Jean Bonhomme, MD, MPH, founder and Executive Director of the National Black Men's Health Network, set the underlying platform for our dialogue. Bonhomme suggests that we are actually fighting at least three types of pandemics within the COVID-19 scenario: (1) the clinical impact of COVID itself, (2) the economic and social effects of mandatory and voluntary mitigation techniques, and (3) the secondary impact resulting from addiction, substance abuse, and other self-directed and harmful coping mechanisms that people have adapted. Each of these sub-pandemics have created significant emotional havoc, the behavioral and psychological effects of which will likely continue for many years.

The panel discussed ways in which the scenarios surrounding the COVID-19 pandemic and our response to it have been unique. Brandon Leonard, Assistant Director, Government Relations at the American Association for Cancer Research, talked about the adverse impact that the pandemic and mitigation have had on many aspects of cancer management. Diagnosis, research, family and community social support networks and on-going care have all been slowed or hurt by the current scenarios. Patients who are engaged in watchful waiting programs for early-stage cancers (most notably men with prostate cancer, for

whom this is a common approach), are finding it difficult to participate in follow-up studies or miss regular appointments because they're afraid of entering a medical office or hospital. We as this period of fear enters its second years, some patients' cancers will have advanced to a much more difficult-to-treat stage. On a broader note, Leonard noted that uncertainty about how and by whom COVID is spreading has led to a significant amount of worry and anxiety. Asymptomatic spreaders are of particular concern, especially among those who may have some level of immunocompromised because of ongoing cancer treatment.

Attenuation of Intimate Relationships and Human Touch

As part of the discussion about social isolation, Susan Milstein, Ph.D., a clinical assistant professor at Texas A&M University highlighted the importance of interpersonal relationships and intimacy. In her clinical practice and work with students, Milstein, who is a Master Certified Health Education Specialist and a Certified Sexuality Educator, has found that isolation from COVID-19 has had a blunting impact on a variety of personal relationships, including curtailment of intimate sexual relationships and anxiety about negotiating them. The need for intimacy has been made even more acute for many individuals who have been isolated and have had large parts of their lives ripped away from them with no certainty about resolution or a return to normalcy. Active mitigation for COVID-19 is expected to continue at least through the second quarter of 2021, a total of close to 18 months since lockdowns began. For many, that is an unacceptable amount of time to shelve physical relationships, particularly at a stage of life when they are so greatly needed. This creates significant stress in many young people's lives.

On the lower end of the physical intimacy the spectrum is the loss of" human touch." Milstein said that many patients and acquaintances, have told her how much they miss and crave a simple touch. A handshake with a colleague, a hug for a relative or close friend, or even just a pat on the arm or back or a reassuring squeeze of the hand by a caring individual during an emotional moment have, for the most part, all been taken away from people. Some social observers and a few public health professionals have argued that after such a protracted period of time living with a heightened sense of potential pathogen spreads, the "age of shaking hands" is likely gone forever. Many on the panel agreed that the change in the sociologic and simple human gestures and touches that are cherished are adding to feelings of isolation, stress and anxiety just at a time when these symbols of friendship and caring are needed the most.

Blunting Communities Responding to Neighbors and Community Support Networks

Deborah Frazier, Chief Executive Officer for the National Healthy Start Association, (http://www.nationalhealthystart.org/), pointed out people in communities across the country are responding to this pandemic in ways that are very different than they have to any other emergency situation, in her memory. In most emergencies, such as hurricanes and floods, communities have been able to quickly come together in-person to respond to both the immediate crisis and long-term aftermath, and to provide emotional support for those impacted. There is a general area emergency management plan and in some parts of the country where natural disasters are not uncommon, there is community and institutional memory of how to respond to crisis. In addition, since most previous disasters have been localized, people outside the affected areas could help, either in person or by sending resources. COVID-19, however, is completely different. Most localities had no community level plan and emergency services were stunned early on and hospitals were overwhelmed, a situation that raised the stress levels of an already stressful situation. And with each new wave, the stress and isolation grow even more. At the same time, since COVID has affected the entire United States (along with most of the rest of the world), isolation

mandates, travel restrictions, and local healthcare overloads have made it very difficult, if not impossible, for volunteers (let alone relatives or close friends) to come from one region to another to help those who have been impacted. As a result, it has been equally challenging for families and communities to grieve the loss of loved ones.

Often, when a disaster hits an area, businesses are rebuilt with the help of the community as they begin the process of recovery. However, in the current pandemic, most businesses—especially small or family-owned—have avoided the physical destruction of their assets despite suffering from economic destruction that is much more difficult to recover from, in part because few, if any, business have business-interruption insurance coverage. The National Healthy Start Association has done several focus panels on the impact of COVID-19 on families and the respondents have expressed a great deal of stress, particularly economic stress, stemming from not being able to respond in the way that they'd like. "People said that with all the stay-at-home mandates, they felt very conflicted about the need to go out, go to work, or do essential chores," said Frazier. "And this just puts yet another layer of stress on top of already-stressful living situations."

Several panel members noted that just as COVID has exacerbated deficiencies in our overall health care delivery systems, which we'll discuss below, it has also exacerbated underlying racial issues. These also have a disproportionately harsh impact on boys and men of color. "Many of these men have expressed to us the need for support for themselves and for their children," said Frazier. "Many of the social support networks that these men depended on for themselves and their children in this era of racial tensions are no longer there for them. This has been detrimental to them and we've heard it loud and clear in our focus groups. The loss of these support systems is also something unique to the COVID crisis. In other crises these support systems may have been disrupted for a relatively short period of time and then reestablished. But with COVID, these services have now been absent for a year and may not be reestablished until the middle of 2021."

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Deborah Frazier, RN

Healthy Start has taken an active approach to supporting the families they serve. For example, they've found that their initiatives to proactively reach out to their isolated client families—simply to ask how they're doing—has turned out to be very important to them. Outreach was done via electronic media, tablets, and computers and within a relatively short period of time saw an increase in group support. Frazier believes that under the circumstances, using technology for isolated people was and is working very well because these folks want to talk with someone. For many of those families, these are new technologies and new approaches. Unfortunately, there have been few

studies on the effectiveness of these electronic safety networks in broad-based, generalized populations and this is an important area for research and development.

The loss of support systems and community services due to mandatory virus-spread mitigation has also negatively impacted other areas of life, including foster-care, assisted living, education, child welfare, child daycare, senior daycare, and recreational support programs. Such impacts, which are widely expected to continue through the first half of 2021, all create tremendous stress, anxiety, and in even feelings of desperation.

US Health Care Inadequacies: A Fundamental Issue

The COVID-19 crisis has magnified—and made us more aware of—many of the inadequacies of our healthcare system. The panel raised and discussed many of the underlying structural and policy weaknesses, the resulting problems, and areas that need to be addressed most urgently (though in many cases, not until the crisis has stabilized), include:

- The overall mortality and morbidity of US males that make up the majority of male health disparity in terms of both quality and length of life.
- Inadequate management of conditions such as cardiovascular disease, obesity, and diabetes that increase morbidity and mortality, especially in males.
- Poor coordination of resource planning and sharing for medical services, personnel, and specialized equipment.
- Poor access and delivery of care in many socioeconomic and minority groups.
- Inadequate numbers of mental health providers, particularly male provider and those of color.
- Under-resourced public health resources at all levels.
- The general reluctance of men to seek medical care and engage in infection mitigation practices.
- Failure to adequately explain in a culturally sensitive and gender appropriate manner information about mitigation techniques.

Salvatore Giorgianni, PharmD, Senior Science Adviser to MHN and President of Griffon Consulting Group, Inc., has extensive expertise in the media's impact on male perceptions of health, and commented on the use of media and media strategies to address many aspects of the pandemic. He noted that "media, particularly social media and on-line publications have had a profound impact on the perceptions of the pandemic and while much of the material the general male population accesses is accurate, unfortunately, much of it is inadvertently or deliberately misleading. One of the unique things about the COVID-19 pandemic is the internet, this is a new and important factor that has not been well harnessed in the current crisis." Uncertainty across so many domains is an important driver of emotional distress for all. When there is a natural disaster or another sort of physical catastrophe in a community it may last for a short period or at least a definable period. With COVID-19, even with the advent of vaccines, there is still a good deal of uncertainty as to when—or whether at all—we as a society or individuals will return to the type of lives we had before. The expected natural lifecycle of viruses includes various mutations. To date, mutations of COVID-19 have proven to be problematic in terms of enhanced transmissibility but not lethality. Yet, the media has run with the story about "dangerous viral mutations now identified in …" While

in normal circumstances, this is a legitimate story to tell, but in the current fearful, hypersensitive environment, these sensationalistic, if-it-bleeds-it-leads stories lead to more fear, more speculation about a potential doomsday virus, and even more anxiety.

While having vaccines available alleviates some of the worries people have, it gives rise to other anxiety-provoking concerns. Simply making the decision to get the vaccine is stressful for so many Americans (in no small part because of the way early discussions about vaccines and their safety and efficacy were politicized). Not knowing when they'll be eligible or where they'll have to go to get it produces another layer of complexity, and that's just the beginning. People see a barrage of media reports warning them about extremely rare side effects, some with as low as a 0.03% incidence rate—meaning that one person in roughly 3,300 will be affected, and they consume conflicting stories how soon immunity kicks in and how long it lasts. The 24/7 news cycle relentlessly and indiscriminately puts out story after false and misleading sensational story about "mutations" and "secret robots" imbedded in vaccines, how the vaccine will alter someone's DNA, or how these products go against the "Will Of God." This unsettling barrage of misinformation and confusion comes at a time when people most need calm and hope but are being left to try to separate fact from fiction.

The media's effect on the public's understanding and sense of urgency about COVID-19 and efforts to battle it has not been studied, nor have reasonable approaches to better managing information flow in a free and open society been suggested. That said, in the African American community, the latest polling indicates that up to 60% are not planning to get vaccinated, and as vaccines roll out to health care workers, there are reports of up to 50% of assisted living facility staff and other residential care staff declining to be vaccinated. This is a very dangerous situation. To date, the messaging about the importance and safety of these vaccines is simply not resonating with these communities. Worse yet, skepticism about the vaccine is not limited to minority communities. On behalf of MHN, Dr. Giorgianni has done over 100 media interviews about COVID-19, in which he discussed the virus, mitigation, and vaccination. Judging from the reactions of media interviewers and the questions and comments of call-in guests, resistance to such fundamental approaches to managing the pandemic is appallingly high.

Relatable Communications Approaches and Trusted Messengers

Some panelists felt that neither the public nor the private sector has effectively used established, persuasive messaging techniques to reach various communities and demographics. We've all seen ads and promotions for products and services featuring notable individuals in the arts, sports, politics, and media. Using "trusted messengers" works when selling soft drinks and laundry detergent, and it works just as well in community settings, but the trusted messenger must be one who resonates with the target demographic. Men and boys, regardless of background, are not likely to respond as favorably to virus mitigation messages from talking-head public service announcements by government officials or cute cartoon characters. They might be much more likely to respond to messages from the likes of Dwayne Johnson, aka "The Rock" or LeBron James.

The same celebrities who loudly speak out on social and political issues are strangely silent at a time when lives are being lost and the public desperately needs accurate information from trusted sources. Where are the celebrity spokespeople and social media influencers and why aren't they talking about vaccinations and easing people's concerns? Clearly, we need to do a much better job of creating media-focused, highly motivating, targeted advertising and public service messaging. Derek Griffith, Ph.D., Director of the Institute for Research on Men's Health and an Associate Professor of Medicine, Health and Society at Vanderbilt University noted that as we begin rolling out vaccines, the community, public health, hospital, and pharmacy-based distribution entities will be more effective if they partner with trusted organizations and individuals. This is especially true in communities of color, where there is a long history of, at best, skepticism, and often outright distrust of government programs and medical institutional programs.

Definition of PTSD

Posttraumatic stress disorder (PTSD) is a psychiatric disorder that may occur in people who have experienced or witnessed a traumatic event, such as a natural disaster, a serious accident, a terrorist act, war/combat, violent attack, or rape or who have been threatened with death, sexual violence or serious injury.

At this point, using celebrity- or Trusted Messengers from the community-based messaging strategies won't be able to undo the massive economic and social damage that COVID-19 has wrought, but it's definitely not too late to use those strategies to promote vaccine compliance and to address many of the intermediate and long-term impacts the virus will have on our society moving forward. This includes making people who suffer from Post-COVID Traumatic Stress Disorder aware that help is available and directing them to the proper sources of psychiatric and community support. Finding the most efficient and impactful ways to reach different market segments through targeted messaging is critical—yet, undeveloped—for research and study.

[15] American Psychiatric Association. (n.d). *What Is Posttraumatic Stress Disorder?* Retrieved January 2021, from https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd

Impacts on Boys and Men

Global COVID-19 Clinical Impact Male Ratio Female

Incident	No. Countries Reporting	Males Ratio	Females Ratio
Overall Cases	128	10	10
Hospitalizations	24	12	10
ICU Admits	17	19	10
Deaths	100	14	10
Confirmed Cases Died	87	14	10

(Adapted from Global Health 5050 Report https://globalhealth5050.org/the-sex-gender-and-covid-19-project/the-data-tracker/ - accessed 01/01/21)

There is ample and growing epidemiologic data that clearly shows that male deaths due to COVID exceed female deaths both globally and across all age cohorts. This disparity in the impact of COVID by gender has been evident from the earliest days of the pandemic, as evidenced by a February 2020 article published in *The Lancet* by Sun, et.al., entitled "Early Epidemiologic Analysis of the Coronavirus 2019 Outbreak Based On Crowdsourced Data: A Population Level Observational Study." As the pandemic has progressed, the higher impact on mortality in men has remained.[16]

Dr. Giorgianni, noted that since early 2020, MHN has repeatedly expressed concern about the disproportionate impact (both in terms of morbidity and mortality) that COVID has had on men and the growing disparities they face. Other men's health experts and advocates have joined MHN in expressing concern that not enough attention was being given to the COVID-19 gender gap and the underlying reasons for the higher mortality in men.[17] The most recent information on this is in Graphic 2 which is adapted from data published by the *Global Health 5050* report that tracks various epidemiologic and statistical data on COVID. This data set has input from close to 130 countries and is representative of experience with the pandemic globally. The data clearly demonstrates that while roughly equal numbers of males and females have contracted COVID-19, men's mortality and morbidity rates (including higher hospitalization rates) are significantly higher.[18]

A recent article by Yanez, Weiss, et. al. examined gender stratified data of COVID mortality in older persons in sixteen countries.[19] The authors observed that men 65 and older experienced 1.77 times higher COVID-19 mortality rates than did women. Peckham, deGruijter, et. al took the analysis a step further by looking at the need for intensive treatment in males compared to females. In their meta-analysis of 3,111,714 reported global cases, they confirmed that while there is no difference in the proportion of males and females with confirmed COVID-19, male patients have almost three times the odds of requiring intensive care unit (ICU) admission and higher likelihood of death compared to females.[20] They note that gender stratified data is not only essential to understanding and managing the current pandemic, but also that gender must be used if we are to develop optimized mitigation, tracking, and treatment models for future

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[16] Sun, K., J. C., & Viboud, C. (2020). Early epidemiological analysis of the coronavirus disease 2019 outbreak based on crowdsourced data: A population-level observational study. *The Lancet, 2*(4), 201-208. doi:https://doi.org/10.1016/S2589-7500(20)30026-1

[17] Men's Health Network. (2020, June 1). *June Is Recognized as Men's Health Month* [Press release], (https://www.menshealthnetwork.org/library/mens-health-month-060120.pdf).. Retrieved January 2021, from https://www.menshealthnetwork.org/library/mens-health-month-060120.pdf

[18] Global Health 5050. (2020). *The Sex, Gender and COVID19 Project*. Accessed January 2020 from https://globalhealth5050.org/the-sex-gender-and-covid-19-project/the-data-tracker

[19] Yanez, N.D., Weiss, N.S., Romand, J.A. (2020). COVID-19 mortality risk for older men and women. *BMC Public Health 20*(1742). https://doi.org/10.1186/s12889-020-09826-8.

[20] Peckham, H., de Gruijter, N.M., et.al. (2020). Male sex identified by global COVID-19 meta-analysis as a risk factor for death and ITU admission. *Nat Commun 11*(6317). https://doi.org/10.1038/s41467-020-19741-6

pandemics. We also need to have stratified data to help monitor any long-term impacts that COVID might have on survivors.

As of June 2020, 57% of deaths in the United States caused by COVID-19 werein men. With the exception of Massachusetts, all states in the United States have reported higher mortality among men; however, the United States has not been consistent in reporting sex-disaggregated data. In a recent analysis of 26 states, only half reported sex as a variable[21]. While COVID is more devastating to males, we can't be sure whether or how gender would play with another infectious entity. The Zika virus outbreak of 2018-19 is a cogent reminder of the need for such gender stratified data collection.

During the panel discussion, Dr. Griffith expressed concern—which was echoed by several of the panel members who study male health—about the lack of consistent disaggregated data about gender in COVID-19-related scientific papers. He stated that "there is a need to disaggregate data that we get in so many areas of health care so that gender and gender identity data is radically apparent." The fact that only about half of states are now reporting data by gender is both frustrating and counterproductive and is a major impediment to developing an understanding of what's happening and why, as well as which types of interventions work for which sub-populations. Setting a universal standard for data reporting by gender is one of the Key Action Items many on the panel feel are important for the current pandemic and for all aspects of health research. Breaking out data by gender should be required for all peer-reviewed journals, government data, and should be a key metric request by research funders.

Male Gender as a COVID-19 Risk Factor

In December 2020, the US Advisory Committee on Immunization Practices, which advises the Centers for Disease Control (CDC) and several other authoritative organizations, published national guidelines to be considered by states, municipalities and other policy and health care leaders in establishing priorities for COVID vaccinations.[22] Shockingly—and most unfortunately—male gender, despite clear and consistent global epidemiologic data, was not considered a demographic factor to be used in prioritizing vaccination. According to Giorgianni, that would be roughly the same as creating screening guidelines for breast cancer that ignored female gender as an important risk factor.

The widespread ignorance of well-documented health disparities when males are the disadvantaged group is emblematic of the uphill struggle that advocates for boys' and men's health have faced for decades—and continue to face. Jimmy Boyd, who was responsible for the establishment of Men's Health Week and Men's Health Month as internationally recognized awareness periods, Jean Bonhomme, and Armin Brott, MBA, a member of the American Public Health Association's Men's Health Caucus believes that until these disparities in health and wellness are recognized and national strategies are put in place to address them, America's boys and men will continue to live sicker and die earlier from more preventable causes than necessary. One of the key action items suggested by several on the panel to help address these disparities is establishing and funding an Office of Men's Health in the Department of Health and Human Services (HHS) and analogous entities at the state and local levels. Brott added that creating a focal point for men's

[21] Bischof, E., Wolfe, J., Klein, S.L. (2020). Clinical trials for COVID-19 should include sex as a variable. *J Clin. Invest*, *130*(7), 3350-3352. https://doi.org/10.1172/JCI139306

[22] Dooling, K., Marin, M., Wallace, M., et al. (2020). The Advisory Committee on Immunization Practices' Updated Interim Recommendation for Allocation of COVID-19 Vaccine. *MMWR Morb Mortal Wkly Rep 2021, 69*, 1657-1660. http://dx.doi.org/10.15585/mmwr.mm695152e2

health matters will help drive policies that will benefit men and their families in many domains. As an example, Brott, who has authored a dozen books on fatherhood, spoke about how poor policy adversely impacts the expectant fathers he works with.[23]

Many men have contacted him relating unfortunate and stressful experiences while preparing for the birth of their children during the COVID-19 pandemic. Many of these men wanted to participate as fully as possible in the prenatal period but many were denied the ability to do so by misguided policy in both the private and public sectors. These men related story after story about how they were not able to go to parenting classes with the expectant mom, be present in the delivery room or otherwise were made to feel extraneous or even unwelcome during the pregnancy and delivery processes. Public offices dedicated to men's issues would help jumpstart the discussions about father involvement and develop ways to educate men and boys about their own health, as well as how to formulate a national approach to health and wellness research that includes male-specific data. They would also provide a structure to coordinate policy and legislation to enhance health prevention, research and healthcare for males.

Impact of COVID-19 on Clinical Care and Mental Health of Boys and Men

There was a robust discussion of the many obvious (and less-than-obvious) direct and indirect impacts COVID has had on delivering health care, and how delivering that care in an environment that is already stretched and fragile has provided dramatic (and hopefully actionable) evidence of deficiencies that we must address in the decades ahead.

In addition to affecting morbidity and mortality from COVID-19, gender has a well-documented influence on human responses to stress.[24,25]There is also interesting early work being done using brain imaging to look at the areas of the brain that are affected by various stressors in men and women, with preliminary findings describing notable differences in both the location and intensity of physiologic brain dynamics between the genders.[26,27] One meta-study of 85 peer reviewed publications looked at both non-pharmaceutical (i.e. handwashing and sanitizer use) compared to pharmaceutical behaviors (i.e. treatment, vaccination) in the general public during respiratory disease epidemics/pandemics. The results show that women in the general population are 49.5% (95% CI 35.9% to 64.2%) more likely than men to practice and/or increase non-pharmaceutical health-protective behaviors and that men in the general population are slightly (12.1%) more likely than women to practice and/or increase pharmaceutical health-protective behaviors.[28]

A survey by the Kaiser Family Foundation in March 2020, indicated that women self-reported that they were slightly more worried or stressed or had negative impacts on their mental health than did men. There

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[23] Store. (2021). Mr. Dad. Accessed January 2020, from https://mrdad.com/store/

[24] Bale, T. L., Epperson, C. N. (2015). Sex differences and stress across the lifespan. *Nature neuroscience*, *18*(10), 1413–1420. https://doi.org/10.1038/nn.4112

[25] Verma, R., Balhara, Y. P., Gupta, C. S. (2011). Gender differences in stress response: Role of developmental and biological determinants. *Industrial psychiatry journal*, *20*(1), 4–10. https://doi.org/10.4103/0972-6748.98407

[26] Bangasser, D.A., Wiersielis, K.R. (2018). Sex differences in stress responses: a critical role for corticotropin-releasing factor. *Hormones 17*, 5–13. https://doi.org/10.1007/s42000-018-0002-z

[27] University of Pennsylvania School of Medicine. (2007, November 20). Brain Imaging Shows How Men and Women Cope Differently Under Stress. *ScienceDaily*. Retrieved January 19, 2021 from www.sciencedaily.com/releases/2007/11/071119170133.htm

[28] Moran, K. R., Del Valle, S. Y. (2016). A Meta-Analysis of the Association between Gender and Protective Behaviors in Response to Respiratory Epidemics and Pandemics. *PloS one*, *11*(10). https://doi.org/10.1371/journal.pone.0164541

are several contextual elements to consider about this survey. First, it was conducted at the very early stage of the pandemic, when the impact of mitigation and isolation were just being felt and the impact of economic loss and family disruptions were just at the beginning stages. Second, this is self-reported data, and it is universally recognized that men under-report mental health issues compared to women by slightly more than half.[29]. Given this magnitude of under-reporting, the true levels of male worry or feelings of stress due to COVID are likely to be significantly higher.

These data suggest that the gender response differentials vary depending on the type of stress and provide important clues as to the total impact of this magnitude of pandemic on men and women. In virtually all the studies, reports, and commentaries reviewed within the conclusion sections, the authors noted that there has been very little research done on the effects of gender on psychological responses to a major pandemic such as COVID-19 and that much more work needs to be done to better elucidate the problem. That, of course, is fundamental to developing and accessing preventative and management interventions. Therefore, we, as a society, must allocate resources and talent to better understanding the psychological impacts of pandemics, and such research must have proper demographic stratification that specifically—and always—includes gender as a key element.

Do you feel that worry or stress related to coronavirus has had a negative impact on your mental health or not?

	Major Negative Impact (% respondents)	Minor Negative Impact (% respondents)		No Impact (% respondents)	Do No Know if It Has an Impact (% respondents)
Men	11	16		63	1
	Male Net Negative Impact: 27%				
Women	16*	20		71	1
	Female Net Negative Impact: 36%*				

https://www.kff.org/coronavirus-covid-19/issue-brief/coronavirus-a-look-at-gender-differences-in-awareness-and-actions/

One of the most obvious ways that policy has impacted non-COVID-related clinical care has been the mandatory lockdowns that have limited the public's access to a broad range of general healthcare services. Many hospitals, medical, dental, and related professional services (such as physical therapy and mental health services) were forced either to close or to limit their hours, capacity, and/or types of services they could provide. As a result, patients and clients found it difficult or impossible to schedule office visits and many had to cancel "elective" medical procedures.

This, naturally, created revenue shortfalls and financial pressures that led many hospitals, clinics, and private practices to close outpatient facilities and to trim services in areas as diverse as neurosurgery and orthopedics.30 This was in part to prioritize the ability to provide COVID-19-related services as well as to comply with closing up what were deemed non-essential health care services. The Physicians' Foundation has estimated that some 8% of all private medical practices have shuttered due to COVID-19, including

[29] Smith, D. T., Mouzon, D. M., Elliott, M. (2018). Reviewing the Assumptions About Men's Mental Health: An Exploration of the Gender Binary. *American journal of men's health*, *12*(1), 78–89. https://doi.org/10.1177/1557988316630953

[30] American Hospital Association. (2020, May). *Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19*. Retrieved January 2021, from https://www.aha.org/guidesreports/2020-05-05-hospitals-and-health-systems-face-unprecedented-financial-pressures-due

many primary care practices.31 This will most certainly further compromise an already under-resourced primary care system. Several on the panel believed that such widespread and long-lasting constraints on health care services is unique to the COVID-19 pandemic.

Mental Health Impacts on Healthcare Workers

The pandemic also put a tremendous amount of stress on health care workers, and we shouldn't underestimate the toll that wave after wave of COVID-19 has had on these people. The long hours, exposure to disease, separation from family, having to deal with constant uncertainty, depressing case outcome scenarios, lack of adequate resources, including personal protective equipment (PPE), and constantly evolving standards of diagnosis and case management all contribute to the stress felt by healthcare workers at all levels. High levels of stress over long periods of time create both short and long-term consequences. We know, for example, that during the 2003 SARS outbreak, rates of PTSD among healthcare personnel increased 20%, despite being relatively mild compared to the COVID-19 outbreak.[32]

There are many anecdotes of that capture the professional and personal stresses on all tiers of health care workers. One involves a family physician who also practices in nursing homes, and who, along with his staff, lost 14 patients to COVID-19 and related conditions within a period of just ten days. There have been countless health care workers across the country who were afraid to go home to their families after being exposed to COVID patients, particularly early on in the pandemic when protective equipment was scarce. Some stayed in apartments, some in hotels and some in RVs to keep their families safe. This led to tremendous isolation from those who provide normalized safety nets for clinicians and health care staff. These traumatic experiences may be transient for some but may also prove to have long lasting psychological impacts. One especially important area for further research is how to better prepare and protect health care workers from the traumatic experiences faced during this pandemic.

[31] Physicians Foundation. (2020, August 18). *The Physicians Foundation 2020 Physician Survey: Part 1*. Retrieved January 2021, from https://physiciansfoundation.org/

[32] Styra, R., Hawryluck, L., et. Al. (2008). Impact on health care workers employed in high-risk areas during the Toronto SARS outbreak. *J Psychosom Res*, *64*(2), 177–183. https://doi.org/10.1016/j. jpsychores.2007.07.015.

Impact on Clinical Training of Health Professionals

Another area of concern is the overall clinical training of future physicians, nurses, pharmacists, and other healthcare professionals. During the pandemic, many students were assigned to ERs and testing centers to help in the important work of testing for COVID-19. Third-year medical student Matthew A. Von Zimmerman, MPH, ENS, MC, USN, noted that during this important practice skill-honing year of training, much of the time that he normally would have spent getting experiential education in a broad range of conditions instead focused on COVID-19. In addition to the all-hands-on-deck approach to screening and testing the large numbers of patients with suspected or presumed COVID-19, service cutbacks at teaching hospitals and office-based adjunct teaching sites were dramatically curtailed. More senior health care professional students in all specialties missed out on important experiential training because of the COVID-19 focus. It is unknown how the loss of more than a year's worth of important practical, hands-on instruction will impact the skills of the next generation of health care professionals, but it will most likely not be positive.

Most people living with cancer have significant anxiety about their treatment and prognosis, and the same is true for their family members. Under ordinary circumstances, stress and uncertainty are directly linked to financial concerns, but under COVID, financial concerns are especially challenging, because the government-mandated lockdowns have resulted in significant job loss, which in turn has led to in many people losing medical coverage or experiencing difficulties managing their co-pays and/or deductibles.

Health Service Curtailments Due to COVID-19 Mitigation: A Broad Area of Concern for Care

All the above-mentioned service- and training curtailments have had far ranging effects on virtually all areas of healthcare delivery and preventive services. Bonhomme, who practices at a substance abuse recovery clinic, is currently doing an assessment of service access for individuals with substance abuse disorders in the Atlanta area. His finding is that patients and clients are having a difficult time accessing care and keeping regular appointments. This, he notes, is most unfortunate and will contribute to downstream problems for those who are in recovery or moving into recovery. We expect to see a lot of mental health patient's relapse. In some cases, such relapses will be caused by COVID-related stresses; in other cases, COVID will merely be a contributing factor.

Virtually no medical condition has been spared interruption of care by the COVID emergency response—not even treatments for other deadly and emotionally difficult conditions, such as cancers. Leonard, spoke about the varied and damaging impacts on cancer patients and their families. Men who are dealing with cancer in addition to COVID-19 are an important demographic. Most people living with cancer have significant anxiety about their treatment and prognosis, and the same is true for their family members. Under ordinary circumstances, stress and uncertainty are directly linked to financial concerns, but under COVID, financial concerns are especially challenging, because the government-mandated lockdowns have

resulted in significant job loss, which in turn has led to in many people losing medical coverage or experiencing difficulties managing their co-pays and/or deductibles. We know of many men and women who have put off medical visits for cancer monitoring and follow-up for the reasons we mentioned earlier: worries about access to medical personnel and facilities and the fear of not knowing how they as cancer patients might fare should they be exposed to COVID-19. We also know that many non-emergency procedures related to cancer management have been delayed because hospitals are gearing up for (or treating) COVID cases. In some instances, these have been pushed back several (or many) months. This not only has an immediate adverse impact on both the care and emotional wellness of the patient and families, but will also have a significant impact in the future. We are particularly concerned with helping patients and their families deal with cancers that have advanced to the point of being untreatable due to delays from COVID-19.

Because of our historically poor mental health support infrastructure, it's unlikely that we'll be able to appropriately address the myriad traumatic events that cancer patients and their families face. Cancer is already a very isolating disease and COVID-19 has made it increasingly difficult for friends and family to visit patients either in hospitals or at their home. Attending live support groups is not possible, and while electronic media is useful, it's not as emotionally supportive as an in-person gathering would be. Unfortunately, we have no reliable data on how well (or whether) virtual support programs for cancer patient may be working. They were quickly and intuitively adopted and are widely acknowledged as "better than nothing." But if they are to continue past the active COVID period, we need to better understand whether they're actually producing the desired outcomes. We also need to carefully assess the virtual/electronic conversations we have in so many other areas of society such as business, education, professional and personal networking, ongoing professional education, and all manner of research.

We have heard of a five-fold increase in requests for emotional and psychological support for cancer patients since COVID-19 first appeared, and there are simply not enough mental-health professionals to meet the demand. Keep in mind that this increased demand is manifesting in an environment where, for the reasons previously outlined, fewer patients are receiving care. When the full cohort of patients returns, as it inevitably will, we anticipate that demand will be overwhelming. So here again, COVID-19 has revealed another known but underappreciated weak link in our health care delivery infrastructure, particularly in the mental health arena.

Service curtailments, and in many cases complete service stoppages have also occurred in the area of dentistry as almost all dental practices have been shut for several months during 2020 either voluntarily or by governmental orders; many of these will not survive.[33]

[33] Brian, Z., Weintraub, J.A. (2020). Oral Health and COVID-19: Increasing the Need for Prevention and Access. *Chronic Dis*., *17*, 200-266. http://dx.doi.org/10.5888/pcd17.200266

Clinical Trials Suffer Several Types of Setbacks

Leonard pointed out that due to COVID-19, important work in both basic and clinical research has slowed, and in some cases stopped altogether. The same is true of both existing clinical trials as well as those planned for novel treatment protocols. In addition to affecting the trials themselves, COVID-19 has had a "trickle-down" effect on the many components that make clinical trials possible. These include clinical laboratory and radiological services, communications lines, regulatory reviews, supply-chain shortages, governmental regulatory oversight and process, and conferences that are an important link to insuring discussion and dissemination of information. In addition, follow-up with enrolled patients will also most certainly be adversely affected as many patients will undoubtedly drop out of the trials. Fewer (and smaller) trials mean smaller budgets and workforces in university and government laboratories throughout the world, thus magnifying the operational hence financial disruption caused by COVID-19.

Once the dangers of COVID-19 have passed, we anticipate some of these factors will gradually resolve and there will be a slow return to normal. However, there have already been substantial delays in important work. Unfortunately, in many cases, it's not possible to pick up an abruptly stopped protocol or research program after a delay of 12-24 months. It will take time to revamp and regroup and we may be losing two or more years of precious time in developing new cures to a variety of diseases.

Impacts on Vulnerable Populations

The above-discussed service curtailments and closing will have a disproportionate effect on the most-vulnerable populations, particularly in minority communities and in rural settings. Jacy Warrell, MPA, Executive Director of the Rural Health Association of Tennessee, (https://www.rhat.org/), noted that rural communities, which are historically very underserved in virtually all areas of health care, have experienced some unique challenges because of COVID-19. For example, much of the messaging about overall health and wellness—and now about COVID-19—that rural communities receive isn't effective, as evidenced by the general health status and morbidity levels in these areas. This may be because existing communication approaches don't resonate with this population segment. It is essential that public health agencies conduct comparative effectiveness assessments of health and wellness messaging and approaches to determine what works best in rural communities. This is especially true when trying to target boys and men within rural demographics, as most health-related messaging is designed to appeal to and motivate women and girls, which has the unfortunate effect of alienating boys and men.

In addition to creating and fine-tuning messaging, as we move forward in the recovery phase of the pandemic in 2021 and 2022, we also need to do a systematic assessment of the overall public health and behavioral health services that are available in rural areas relative to urban areas. We then need to create mechanisms to augment underfunded public health infrastructure in these areas that will enable us to better deliver health promotion, disease prevention, and care services to rural areas.

Boyd noted that much could be written about the support dynamics to address medical emergencies in rural communities, v. urban communities, and v. inner-city communities. For example, primary and secondary controls in rural communities may be stronger than those in urban communities - necessitating a different avenue for influencing behaviors. In rural communities, one often finds family, both immediate and extended, living in short distance from each other, and church-going and other activities where one interacts with neighbors and fellow employees. Urban/suburban areas find one surrounded by "strangers"

who ~~one~~ often refers to as "friends," but who may have little influence on an individual's decision and response to health or other crisis.

A Quantum Leap for Telehealth and Telemedicine Services

Telehealth and telemedicine services, and reimbursements for these services, have been used to offset some of these deficiencies caused by COVID-19's deleterious effect on in-person patient-provider interactions. However, these approaches can't possibly cover all circumstances or provide procedural types of care. For example, COVID-19 has made getting diagnostic tests much more difficult, whether routine labs to monitor high cholesterol or as part of a watchful-waiting strategy, or less-routine ones to diagnose a suspected emerging condition. It's already hard enough to get men to engage in health care, and the longer waits, widespread fears about going out and being exposed to COVID, a shortage of providers and staff, and shorter hours have expanded the vacuum in the continuum of care for many boys and men. Bringing those who have had significant care lapses back up to levels of clinical stability will take a lot of time, and in many cases, will require additional resources to deal with damage caused by a condition that received no treatment for most of 2020 and beyond.

Toward the end of 2019, telehealth and telemedicine were on the verge of breaking into the mainstream of medical care. There were several early adaptors of this technology and many improvements in telehealth delivery, care quality, and patient confidentiality had been made over the last 4 to 5 years. There was also an increased use of remote telemetry equipment, which allowed important vital signs to be transmitted to providers or intermediaries for monitoring. Despite these technical advances and patients' apparent willingness to adopt these technologies—especially those with either geographic or socioeconomic challenges to accessing to health care services—many main-stream traditional practitioners, practitioner organizations, and third-party reimbursement entities, including Medicare, were not embracing these advances or providing adequate reimbursement at parity to more traditional medical encounters.

COVID-19 changed all of this. Very quickly, telemedicine, telepsychiatry, telehealth services became in medicine what electronic-meeting platforms such as Zoom became for business: the only practical way to provide needed services. This included a very important decision early on during the pandemic that Medicare would readjust reimbursement rates for telemedicine visits so that it was more in line with the value of these encounters. In early 2020, approximately 15,000 Medicare patients per week, mostly from rural areas, were being covered for telemedicine visits. However, as COVID-19 spread across the U.S., the Center for Medicare and Medicaid Services (CMS) adjusted reimbursement rates and broadened coverage for both telemedicine visits and remote patient monitoring (RPM). There was a rapid and dramatic uptick in these provider service options, and by early-April 2020, more than 1.8 million telemedicine visits were being billed every week.[34] Clearly, this explosion was the result of both the need to provide an alternate way for patients to safely engage in health services and the added flexibility providers needed to safely treat patients.

Gregory Pecchia, DO, Family and Geriatric Medicine Practice and Medical Informatics at Eisenhower Medical Center, believes that even after vaccines become widespread and the pandemic is brought under

[34] Verma, S. (2020, July 15). Early Impact of CMS Expansion of Medicare Telehealth During COVID-19. *Health Affairs Blog*. https://www.healthaffairs.org/do/10.1377/hblog20200715.454789/full/

control, we won't get back to pre-COVID office-based health care visits anytime soon. Several other panelists agreed.

Now, more than a year into the pandemic, teleservices and remote patient monitoring in the health care space have become nearly mainstream and will only grow in in both popularity and acceptance as ways to deliver care, particularly primary care. While there is a bright future ahead for telehealth and telemedicine, there is still much to be learned about its efficacy and how to make these available to more people, including those who don't currently have the resources or capacity to take advantage of them. There is also a great need—and growing opportunities for—general research and comparative outcomes research in the area of telehealth, including in the area of providing mental health services using this technology.

Consequences of an Under-Resourced and Underfunded Public Health System

With regard to management of mental health, many experts, including several on the panel, noted that prior to the COVID-19 pandemic, mental health services in America were understaffed, underfunded, fragmented, and overburdened. All these issues have been exacerbated in very dramatic ways due to COVID-19 and will become even more evident as we proceed to address the long-lasting traumatic impacts of the virus, particularly on boys and men. The lack of coordination and integration with primary-care services and poor access to any support services in urban healthcare deserts and rural communities are particularly glaring. As the mental health impacts of COVID-19 become more and more apparent, the systemic deficiencies in treating people, particularly boys and men who are already reluctant to get care, will become increasingly problematic.

The legacy of poor funding, poor infrastructure and information technology (IT) support, understaffing, and procedures that were unable to provide rapid, wide-spread distribution became obvious in the early phases of COVID-19 testing, when there were widespread shortages of tests and results weren't available for three to five days or in some cases much longer .

Early phases of COVID-19 testing and vaccination distribution were almost completely put into the hands of state, regional, and local public health systems. The expectation was that these departments would be able to provide distribution networks that would quickly and effectively get vaccines to places where the public would be able to access them quickly and efficiently. Regrettably, this didn't happen. The legacy of poor funding, poor infrastructure and information technology (IT) support, understaffing, and procedures that were unable to provide rapid, wide-spread distribution became obvious in the early phases of COVID-19 testing, when there were widespread shortages of tests and results weren't available for three to five days or in some cases much longer. Similar problems have plagued vaccine distribution, particularly in early 2021, when vaccination rates were modest at best, with some localities distributing just 20-30% of their allocations from December 2020. The IT support for these massive efforts was insufficient, and systems for required registration were riddled with problems mired and seemed to have been created in an unintuitive, frustrating way that was especially challenging for seniors, people with limited computer skills, those living in lower socioeconomic demographics, and those without reliable internet services.

Fortunately, many of these issues were quickly resolved, and by mid-January, adjustments were made to private sector distribution channels, including hospitals and pharmacies. Yet these lapses cased a great deal of unnecessary frustration, anxiety, and stress on an already-overly stressed population. They also created a lag time during which Americans suffered additional COVID-related complications and deaths. In addition, the frustrations people experienced in the early days of vaccination may have reduced the number who would ultimately be vaccinated. Individuals who waited in long lines only to be turned away or who had poor experiences with online scheduling systems were understandably reluctant to repeat the process later and therefore put off being tested or vaccinated. This is of particular concern for boys and men, as the frustration levels in dealing with the health care system easily reach a point where they just will not go or will go only reluctantly and after a long delay.

Given that public health systems will likely remain an important component of any widespread response to other medical emergencies in the future, these significant, and long-recognized, infrastructure and administrative problems need to receive systematic and intensive review, as well as funding. It's also critically important to do comparative assessments of where public health agencies were able—or unable—to meet demand, and to disseminate this valuable information so other agencies can learn from the successes as well as failures. If we don't do this, our public health infrastructure will never be equipped to make the changes necessary to ensure that all Americans have easy, timely, effective, and affordable treatment options the next time we have a public health emergency.

Most planners have discovered that cooperative arrangements between public and private sector health care providers and product and service distribution entities provided an optimized approach to managing these acute issues.

Substance Abuse

As a result of extended periods of high stress and increased time at home, the use of alcohol is on the rise.[35] Similarly, there is a dramatic increase in other frequently abused substances, particularly opiates. In addition to rising rates of abuse, regrettably overstretched emergency departments and first responders are seeing a corresponding in an increase in cases of substance overdose. Over 81,000 drug overdose deaths occurred in the United States in the 12 months ending in May 2020, the highest number of overdose deaths ever recorded in a 12-month period, according to recent provisional data from the CDC. This represents an alarming overall increase in overdose deaths of 26.5% from the same period in 2019 and was driven by a 38.4% increase in deaths from fentanyl overdose alone.[36] The downstream impact of these increases on the broad range of associated medical and psychiatric conditions of survivors and their families cannot yet be determined, but most experts feel that it will be substantial and put yet another stress on our overtaxed health care service sector for some time to come.

Suicides have also increased during the COVID-19 pandemic, and will likely continue to rise even after the disease has been reined in. This is (and will continue to be) due to a variety of factors, including substance abuse, job loss and financial devastation, and COVID-19 Post-Traumatic Stress Disorder. MHN is very

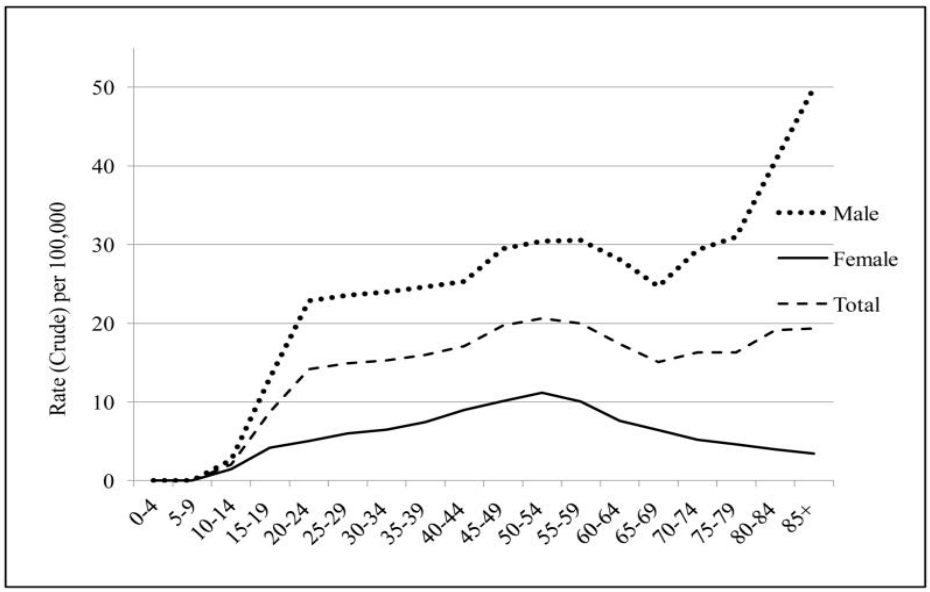
[35] Pollard, M., Tucker, J., Green, H. (2020). Changes in Adult Alcohol Use and Consequences During the COVID-19 Pandemic in the US. *JAMA Netw Open, 3*(9), 202-294. doi:10.1001/jamanetworkopen.2020.22942

[36] Centers for Disease Control. (2020, December 17). *Overdose Deaths Accelerating During COVID-19: Expanded Prevention Efforts Needed* [Press release]. Retrieved January 2021, from https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html

concerned that the rates of male suicide, which has spiked dramatically since 2016, will continue on its upward trend . Across all ages and ethnicities, American men commit suicide at far higher rates than women. According to the most recent CDC data, males between the ages of 15 and 64 are roughly 3.5 times more likely to commit suicide than females the same age. Among those aged 65 to 74, males are more than 4 times as likely to commit suicide. And for those over 74, the male to female ratio is that for every 1 female that commits suicide there will be 9.3 males who commit suicide. Overall, for males, suicide is the seventh leading cause of death; for females it's the 14th.[37]

Tragically, the greatest increase in suicides occurred in males 25-40 years old—the time of life when where so many men have had their identity and self-worth challenged due by a worldwide pandemic that may have cost them their jobs or forced them to close their businesses.

US Suicide Rates Total Compared to Male and Female Across Age Cohorts



CDC: Suicide Rising in the US, June 2018

While the magnitude of the actual impact of COVID-19 on mental health issues in boys and men may never be fully understood, there are some provocative estimates of the overall effect on suicide rates. The Well Being Trust and the Robert Graham Center for Policy Studies in Family Medicine have estimated that, short term, as many of 75,000 more people will die from drug or alcohol misuse and suicide that can be directly attributable to the despair wrought on people from COVID.[38] If general epidemiologic trends for suicide by gender hold, the vast majority of these (an estimated 50,000-55,000) will be in males.

Other Systemic Health Issues Brought to Light by the COVID-19 Pandemic

In addition to shining a bright light on numerous problems in terms of our overall health care infrastructure and capacity, the broad-ranging impacts of comorbidities—particularly in males—that contribute to COVID-related mortality, as well as issues with effective and accurate messaging, panelists

[37] National Center of Health Statistics. (2017). *Deaths, percent of total deaths, and death rates for the 15 leading causes of death in 5-year age groups by race and sex: United States, 2015*. [Data set]. Center for Disease Control. https://www.cdc.gov/nchs/data/dvs/LCWK1_2015.pdf

[38] Well Being Trust and the Robert Graham Center. (2020, May 08). *Projected Deaths of Despair During COVID-19*. Retrieved January 2021, from https://wellbeingtrust.org/areas-of-focus/policy-and-advocacy/reports/projected-deaths-of-despair-during-covid-19/

raised a wealth of other concerns that they feel must be addressed both nationally and locally that will be important to future management of large-scale medical emergencies and pandemics.

In terms of delivering clinical care both during and after the COVID-19 pandemic, many of these systemic shortcomings have existed in America for a very long time. One especially important issue to come out of the pandemic is the disparity in effects of the virus on various communities. Males as a group have, as we've discussed extensively in this report, been disproportionately—and negatively—affected. In addition, COVID has hit communities of African American, Latino, Native American and Alaskan Native especially hard.

The need to better address and maintain consistent initiatives in public health was one concern voiced by Warrell. She observed that we tend to approach public health needs "in fits and starts," without any apparent long-term goal or sustainability. For example, many public-health campaigns—such as obesity reduction, opioid use awareness, and seatbelt use—enjoy early, well-funded government support. But after a while, they disappear, only to be replace by the next "trendy' issue of popular interest or concern. Some members of the panel with extensive experience in public health noted that because healthcare in this county is largely a government function, policy and funding are almost always intertwined with political platforms and goals, which can often be helpful but just as often leads to shifting priorities as political leadership, at every level, changes or political will changes. Several on the panel expressed the hope that in the years following the COVID-19 pandemic, we as health professionals and collectively, as Americans, won't forget what we've learned about how to—and not to—fight widespread medical emergencies. What we have learned—including what we've learned from our mistakes—needs to be put into practice for the long term and also be sustainable. Boyd believes that focusing on addressing core determinants of health is of fundamental importance moving forward.

Jei Africa, Psy.D. MSCP, CATC-V, Director of Behavioral Health and Recovery Services (BHRS) of Marin County, and others on the panel addressed many of the racial disparities and inequities COVID-19 has also brought to the forefront. Africa noted that it is important to think about how COVID-19 has impacted—and been impacted by—racial inequality. "This is a particular problem in some parts of the country, such as where I practice in California," said Africa. "Even the concept of mask wearing can be problematic in some communities. In some African American communities, there was a general fear of wearing masks, particularly among men because of the connotations to criminality. The mandate to wear masks was an impediment for many and set up very stressful situations." The Asian community faced other challenges, noted Africa. "We saw many Asians wearing masks, not necessarily to mitigate viral spread but to try to hide the fact that they were Asian." So, for many people of color, the decision to wear or not wear a face covering is much more of a stressful one that many would have believed. It is yet another example of some of the unexpected but very real small stressors that so many are facing day in and day out during the protracted period of COVID-19.

Gibbs spoke about how health care related to pandemic care payment issues impact families with COVID-19, particularly for those who had family members admitted to hospitals for COVID. And this has, once again highlighted the issues we face with health care coverage, particularly in underserved communities. Gibbs related the example of one couple who both were hospitalized, at different times but close together, for COVID care. The treatment for one of these retired persons was 10 weeks. These will place substantial burdens both financially and emotionally on patients who have been treated and is a good example of the long-lasting traumatic impacts of COVID that so many are facing.

Milstein noted that one of the broad issues that will ultimately help with the overall willingness of boys and men to successfully address emotional issues is to help refine the concept of what healthy masculinity is in the post-COVID-19 world. We need to distance ourselves from the notion of men as "the breadwinner" for the family or the need to "cowboy-up" as markers of what it means to be masculine. This is a very big undertaking and will take generations to achieve. Two of the components of this model of healthy modern masculinity are, of course, emotional connectedness and developing an emotional lexicon. Brott added that men need to take responsibility for their own health care needs and that of their loved ones and see that as an integral part of masculinity.

Key Principles to Advance Our Ability to Deal with Pandemic Mental and Clinical Health Challenges

The COVID-19 pandemic has brought much disaster, hardship, and death to the world. Many of the more significant impacts—particularly in terms of economic and emotional wellness—have yet to be felt. But most of the panel agree that they will be soon, and for a very long time, especially for those who will be suffering from COVID-Related Post-Traumatic Stress Disorder (CRPTSD). However, the world must move forward and ensure that the lessons learned from this terrifying series of events and their aftermath become tools that will help us better respond to the next inevitable pandemic and Disease-X. Once a virus such as COVID-19 entrenches itself in our biologic ecosystem, it will likely remain —and it likely will continue to evolve (in fact as of this writing, a new, more contagious strain of COVID-19 has already been seen in the US and other countries). There will always be other microbiologic challenges.

We must act and conduct studies to better understand what works (and what doesn't) and what provides the most positive outcomes. All on the panel agreed that the silver lining to the COVID-19 pandemic (to the extent that such a thing is even possible) has been the information we've gained about some of the many structural, ethical, cultural, and racial weaknesses of our health care and the recognition that we must address these inequities much more vigorously than we have in the past.

Our ability as a civilization to provide solid health care to all and our ability to respond quickly and efficiently to global or national health emergencies must be a primary objective of policy makers at all levels of government and those with health-related interests in the private sector. It is likewise the responsibility of patient advocacy organizations such as Men's Health Network (MHN) to continue to make inquiries and help frame the work which needs to be done, and to keep those responsible for this work on-track and on-point.

Griffith, a member of this panel, and his colleagues identified several biopsychosocial determinants and associated practice, policy, and clinical or biomedical intervention strategies that may be effective in reducing disproportionate COVID-19-related morbidity and mortality among.[39] This important set of recommendations has been adapted and is presented below with permission of the author.

[39] Griffith, D.M., Sharma, G., et. al. (2020). Men and COVID-19: A Biopsychosocial Approach to Understanding Sex Differences in Mortality and Recommendations for Practice and Policy Interventions. Prev Chronic Dis, 17, 200-247. http://dx.doi.org/10.5888/pcd17.200247

Biopsychosocial Determinants and Associated Practice, Policy, and Clinical or Biomedical Intervention Strategies for Reducing Disproportionate COVID-19–Related Morbidity and Mortality Among Men

Determinants (Risk Factors)	Type of Strategy	Strategies (Varying Levels)
Clinical or Biomedical Strategies		
Comorbidities such as hypertension, cardiovascular disease, chronic kidney disease, diabetes, and chronic obstructive pulmonary disease	**Practice**	1. Educate men with comorbidities during routine visits, emergency encounters, and follow-up telephone calls about their susceptibility to COVID-19 and when to obtain urgent care; 2. Reassure patients that new symptoms of myocardial infraction and stroke need to be urgently addressed.
	Policy	Increase investment in primary prevention of disease
Use of ACE or ARBs	**Clinical or Biomedical**	1. Medical scientists should consider consequences of withholding ACEIs or ARBs for men; 2. Clinicians should actively assess risk and optimize cardiovascular health
Sex-dependent immune response & the presence of disease susceptibility genes		1. Design clinical trials and population health databases; consider sex as a biological variable that might affect drug efficacy, treatment options and adverse outcomes; 2. Consider immunologic sex differences in mitigation of disease and clinical trials that consistently show sex differences.
Behavioral Strategies		
Men who are at increased risk because of cardiometabolic or other preexisting risk factors or are at increased risk because they use tobacco, alcohol, or other drugs	**Practice**	1. Focus on helping men who have underlying conditions that increase their risk of COVID-19 mortality to change behaviors that could make it more difficult for their bodies to fight COVID- 19–related conditions; 2. Promote American Heart Association's Life's Simple 7, including smoking cessation, maintaining a healthy weight, adequate physical activity and balanced healthy diet and target values for cholesterol, blood pressure, and blood glucose
Men who perceive reduced susceptibility and severity of disease and engage in high risk behaviors	**Policy**	Pass risk-reduction policies.
Men who perceive reduced susceptibility and severity of disease and engage in high risk behaviors	**Practice**	Encourage health professionals to educate men on how to reduce viral transmission, engage men's partners, families, and trusted loved ones about men's unique biological or psychosocial risks.
Men who perceive reduced susceptibility and severity of disease and engage in high risk behaviors	**Clinical or biomedical**	Develop and institute COVID-19-specific clinical and operational guidelines in specialties; these include patient education information on occupational risk mitigations, recognizing signs and symptoms of COVID-19 infection, hand hygiene, surface decontamination, and protecting family members

Men tend to delay seeking clinical care for COVID-19 symptoms	**Practice**	1. Eliminate barriers associated with underutilization of health services and improving health literacy; 2. Engage men's partners and families to support and encourage symptomatic men to seek care; 3. Engage community health workers to provide direct outreach to men with comorbidities to provide culturally and linguistically appropriate preventative care.
	Policy	1. Increase access to community-wide testing; eliminate costs of testing and other barriers; 2. Collect data related to COVID-19, including data on testing, hospitalizations, intensive care unit admissions, and fatalities, disaggregated by race, ethnicity, sex, and gender at the local and national level to help distribution of resources.
		Abbreviations: ACE2, angiotensin-converting enzyme 2; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; COVID-19, coronavirus disease 2019; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; TMPRSS2, transmembrane protease, serine 2

Recommendations

In the spirit of building better, the panel offered several recommendations about key action items and areas for research regarding clinical care and pandemic management. Panel members were asked to provide their perspective and opinion on what needs they felt were key action items. Below are some of the panelists' comments.

Drs. Africa and Milstein

Work on re-identifying masculinity in a meaningful way that incorporates concepts of physical and emotional health and wellness.

Dr. Bonhomme

Getting more people trained in men's heath is very important to helping build not only the awareness and general skills needed at every level of health care and in the community that supports boys and men, but also to build true expertise in delivery of care to males. It's just not logical to have a subspecialty that focuses on women's health care yet deny that such a subspecialty is appropriate and needed for males.

We need to address the misguided political opposition to examining the health needs of boys and men as a definable population. Public and private policy officials and health care organizations, think tanks, and social commentators need to be sensitive to the fact that it's harmful and discriminatory to half of the US population to simply dismiss—or worse, disparage—valid discussions about the uniqueness of health care needs and policies for boys and men.

Mr. Boyd

Systematically evaluate and restructure clinical and community tools to take into account the unique ways boys and men are screened for emotional wellness.

Mr. Brott

Establish and fund an Office of Men's Health, similar to the decades-old Office of Women's Health within HHS (and the similar offices that exist within other federal agencies). This would not only provide coordination and development of national level strategies to take on life-and-death issues that affect boys and men, but would also send a strong signal to all that it is alright and appropriate to address the health of men.

Dr. Dougherty

Address the need for more emphasis on diagnosing, treating, and working with men and boys. We need to address these critical skill sets with professional accreditation bodies ensure that these skills become part of core-competence evaluations for licensure and post-graduate training.

Mr. Gibbs

We need to bring men and particularly men of color into professional programs and rethink our recruiting strategies for these programs.

Must increase the ranks of mental health providers overall and work toward aligning them more closely with primary care and community outreach.

Dr. Giorgianni

Need to have a health professional associations and guidelines-setting groups examine their portfolio of guidelines to help clinicians more robustly address the comprehensive wellness and treatment needs of

men based on what we know about the science of male health.
Health professionals should within their own discipline engage in a rigorous, honest, and earnest review of the scientific and ethical utility of developing Comprehensive Men's Health specialist certifications. They must also assess their requirements and portfolios of academic, post-graduate, and continuing educational offerings that focus on the unique physiologic and psychologic needs of males that would require core competency for the care of males at every level of practice.

Dr. Griffith

It is very apparent we need to disaggregate data that we get in so many areas of health care so it breaks out gender and gender identity data. One of the frustrating things about trying to understand the impact on men of COVID is that only 26 states are now reporting data by gender. This is counterproductive and an impediment to the kind of thorough understanding of what is happening and what types of interventions work for major sub-populations.
Need to critically analyze the linguistic and graphic materials that are used to message men and boys about COVID mitigation, situational awareness, treatments and extremely important at this critical period, vaccinations. These not only need to be crafted for males using population sensitive approaches but also for important sub-populations of men.

There is a need for a significant amount of research on the effectiveness of health care messaging and various messaging channels about COVID and other health emergencies needs to be done to better understand how to reach boys and men with critically important messages and personal practices.

Dr. Milstein

Must not lose sight of the importance of simple human physical interactions and intimacy.

Dr. Njai

That the learnings and early lines of inquiry into our public health and clinical activities to deal with the COVID-19 pandemic remain at the forefront of our efforts to better deal with public health disasters such as this one.
Correcting the obvious deficits in the determinants of health in minority communities is essential to address the fundamental problem of how co-morbidities impact physical resilience to pandemics such as this one.

Dr. Pecchia

We need to critically evaluate the process of engaging men, and particularly minority men, in thinking about health care professions as appropriate and achievable career paths.
Address the realities of the cost of health profession's education for minority men to help ease the financial impediment that may be present. These potential solutions may include approaches such as public private partnering, innovative funding models, and increase in targeted scholarships.
Examine the application of technology to help bolster clinicians' abilities and reach to identify and manage the critical health care needs through telehealth. This is also an important area for outcomes-oriented funding so we can examine the comparative effectiveness of these evolving technologies in delivery of primary and specialty care.

Ms. Warrell

Better develop communications structures and delivery that will better reflect the unique needs of those in rural communities.
Continue to support and refine technologic solutions, such as telehealth, telepsychiatry and remote patient monitoring and their delivery platforms for rural communities.

Next Steps

Panel Consensus Summary of Key Action Items and Research Needs to Better Address Male Health Matters Related to Infectious Pandemics

- More decisively address the broad range of drivers for male morbidity and mortality.
- More decisively address health disparities and structural issues that have come to light due to COVID-19, particularly in communities of color.
- Encourage and support adoption of newer technologies such as telehealth and remote data monitoring.to deliver health care.
- Assess the impact of these newer healthcare delivery technologies and approaches in general and particularly on their impact on rural and underserved communities or patients with limited in-person access to medical care for any reason.
- Review reimbursement models to ensure that there is reimbursement parity for newer technologies to deliver health care services.
- Create more coordinated national, regional, and local structures and systems for distribution of necessary of services and supplies through various public and private distribution channels during broad medical emergencies and pandemics.
- Conduct comparative evaluations of distribution practices for critical services and supplies to end-users during to determine optimal efficiencies during broad medical emergencies and pandemics.
- Encourage the use of state-of-the-art impactful market-segmented health messaging approaches that take advantage of techniques used in most other consumer market segments.
- Evaluation of population segmented health messaging, trusted messengers and communications platforms to help guide outreach to people needs to be conducted across population bases.
- Adopt a universal standard to require that scientific study data regarding any and all biomedical research and surveys includes gender stratification, at a minimum, and optimally gender and racial stratification. This data format should be a standard requirement of all peer-reviewed journals and government data reports and should be a key metric requirement of those who fund biomedical and biomedical related research.
- Conduct a 360-type review of public health departments, resources, including funding, technology and manpower to ensure that they are better able to respond to future widespread medical emergencies.
- Adopt a symptomatology and diagnostic criteria as well as CPT and DSM codes for COVID-Related Post-Traumatic Stress Disorder (CRPTSD).
- Adapt and expand techniques that have been successful in recognizing, mitigating, and treating Post-Traumatic Stress Disorder (PTSD) to CRPTSD.
- Establish and fund an Office of Men's Health in the Department of Health and Human Services (HHS) and analogous entities at the state and local levels to create a focal point for male health.

- Engage in additional research to better understand the direct and indirect impacts of pandemics on behavioral health issues and neuropsychiatric conditions in men.
- Conduct studies to better elucidate the physiological impacts of potential pandemic capable pathogens on males.
- Evaluate the utility of so-called 'Virtual Visits' and other alternative approaches to in-person visits as a substitute for live-in-person home visits or group meetings for medical peer-to-peer support groups, and social service in-home visits.
- Conduct workforce demographic analysis of health care professions and develop recruitment and financial support systems to address the need for additional minority men in all health care professions.
- Develop professional educational and post-graduate education standards for core curriculum and core competencies in comprehensive men's health care. Incorporate such standards into professional licensure and specialty board certification assessments.

Appendix I Panelists

Jei Africa, Psy.D. MSCP, CATC-V
Director of Behavioral Health and Recovery Services (BHRS) of Marin County Department of Health and Human Services

Jean Bonhomme, MD, MPH
Founder and Executive Director of the National Black Men's Health Network
Science Advisory Board, Men's Health Network

Jimmy Boyd
A federal- and state-level policy analyst and Cofounder Father's Connection

Armin Brott, MBA
Member of the American Public Health Association's Men's Health Caucus
Author and Syndicated Columnist on Men's Health, "Mr. Dad"

John Dougherty, DO, FACOFP, FAOASM, FAODME, FILM
Founding Dean and Chief Academic Officer, Noorda College of Osteopathic Medicine
Organizational Physician, Kansas City Royals

Deborah Frazier, RN
Chief Executive Officer for the National Healthy Start Association

Alphonso Gibbs, Jr, LCSW, LICSW
Veteran's Administration Health Systems of Southern Nevada

Salvatore J. Giorgianni, Jr, PharmD
Project Lead, Senior Science Adviser to MHN
Co-Founder and Chair-Emeritus, American Public Health Association Caucus On Men's Health
President, Griffon Consulting Group

Derek M. Griffith, PhD
Director of the Institute for Research on Men's Health and an Associate Professor of Medicine, Health and Society at Vanderbilt University

Brandon L. Leonard, MA
Assistant Director, Government Relations at the American Association for Cancer Research

Cory Lyon, DO
Associate Professor, School of Medicine
University of Colorado Anschutz Medical Campus

Susan Milstein, PhD, MCHE
Clinical assistant professor at Texas A&M University
Master Certified Health Education Specialist

Rashid Njai, PhD, MPH, LCDR, USPHS
Health Scientist at the Office of Noncommunicable Diseases, Injury and Environmental Health (ONDIEH) at the Centers for Disease Control and Prevention

Greggory Pecchia, DO, FACOFP
Senior Director, Academic Innovation/Telehealth
Western University of Health Sciences
Geriatrician

Thair Phillips
Panel Moderator
Spokesperson, Seniors Speak Out

Art Shanks, LCSW

Shamaal Sheppard
Manager, Advocacy Communications and Engagement, National Association of Community Health Centers

Matthew A. Von Zimmerman, DO, MPH, LT, MC, USNR
Medical Resident, Louisiana State University

Jacy Warrell, MPA
Executive Director, Rural Health Association of Tennessee

Appendix II Agenda

Supplemental COVID-19 – Behavioral Health Issues Directly Related To Clinical Considerations
Men's Health Network
November 6, 2020 E-Conference
Impact of COVID-19 On Behavioral Health Issues For Boys and Men

Defining the Problem
How do Public Health Emergencies In General Impacted Clinical Care Of Populations?
How Have Past Pandemics Impacted Clinical Care Of People And Particularly In The US?
How Is COVID-19 The Same & Different In The General US Population?
How has COVID-19 Impacted Overall Clinical Care For Boys and Men

Impact of COVID-19
What are the important *Clinical Care* Behavioral Health manifestations and Impacts of COVID-19 On Boys & Men:
As directly related to COVID infection
Related to Non-COVID Physical Conditions
Related to COVID related Mental Health Conditions
Is the *resiliency factor* with COVID different than in other public health emergencies?
How is mental health impacted by *media?*
What is the impact of the evolving scientific and seemingly at times contradictory knowledge of COVID?
How has the uncertainty about "When will this be over?" or "Will it ever be over?" impacted people?
Are there important Clinical distinctions are to be made in these areas in special populations such as:

Boys and Men of Color
- Military & Veterans
- GBTQ
- Blue Collar & White Collar Workforce
- Young Children
- Older Men

Moving Forward
Principle Lessons Learned about Pandemic Impact On Males in 21 Century
What key things need to be done to help address Immediate Post-Acute Pandemic Mental Health Care?
What types of outcomes patient focused studies do you think would be helpful?