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Dispelling COVID-19 Myths:

Implications of Vaccination Acceptance by African Americans and Others in Marginalized Communities

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History: Vaccination Hesitancy Is Not a New Phenomenon

Over the last 200 years since the first vaccine was used in the U. S. to prevent smallpox, some Americans have been fearful and mistrustful about inoculation as a means of protection from lethal viruses.[1] Historically, Delawareans have been no less suspicious. For instance, despite the efficacy of vaccination for smallpox, opponents to inoculation continued throughout the 1920s. Opposition was especially fierce when compulsory vaccination was enacted. In fact, in 1926, while at a health office in Georgetown, Delaware to vaccinate residents, a retired Army lieutenant and a city councilman led a violent and armed mob to run the vaccinators out of town.[2]

Dispelling Myths About COVID-19 Vaccines

Myth: The risks of vaccines outweigh their benefits.

Today, one in four individuals believes that vaccines cause autism, even though sixteen methodologically sound and controlled epidemiological studies, conducted in different countries between 1991-2019, show no relationship between vaccines and autism.[3] Furthermore, other research demonstrates there is no association between the measles, mumps, and rubella (MMR) vaccine and autism.[3]

Data show that the COVID-19 vaccines are among the safest and most efficacious ways to reduce the number of new infections, decrease the likelihood of severe infections, reduce death as an outcome if infection occurs, and slow the progression of the pandemic. The evidence is clear that "[v]accines are inarguably the most important medical advance in human history. Scientists can attest to the fact that ten historically fatal diseases have been reduced by 92% to 100% percent since the 20th century. Smallpox has been eradicated and polio is nearly gone." Moreover, epidemiological data show "…vaccines have saved literally tens of millions of lives and prevented hundreds of millions of cases of disease, if not more."[1]

Myth: The COVID-19 vaccines were developed too quickly to be safe.

Kizzmekia C. Corbett is African American. She is also the scientific lead for the Coronavirus Vaccines and Immunopathogenesis Team at the National Institutes of Health, National Institute of Allergy, and Infectious Diseases. One of her precise and clear explanations clarified the speedy process that lead to the development and introduction of the COVID-19 vaccines to the public. Her very instructive presentation is a perfect way to address the average person's concerns about the vaccines' rollout to the public.

> "The tremendous amount of research that went into understanding how to make an effective and safe vaccine ***before the pandemic occurred*** essentially explains how the COVID-19 vaccines were available for administration so quickly. Prior to the pandemic,

> hundreds of scientists had already studied the development of vaccines, including, mutations, while simultaneously learning about other coronaviruses. The end product of researchers working side by side is a messenger mRNA vaccine that teaches human cells how to make a special protein that triggers an immune response inside the human body. Following tests on mice, and adherence to other ethical research protocols, Moderna was able to make a COVID-19 vaccine in four days and ship it in 41 days for Phase 1 clinical trials which began March 16, 2020, and Phase 2 trials which started on May 29, 2020. Phase 3 trials, the purpose of which was to determine if the vaccine really worked, began on July 27, 2020."[4]

Myth: COVID-19 vaccines change the internal make-up and functioning of the body.

The mRNA vaccines cannot change a person's DNA or interfere with fertility. Further, none of the COVID-19 vaccines used in America contain the live COVID-19 virus. Rather, the vaccines contain an mRNA strand that codes for the protein that activates an immune response in the body.[4] The mRNA strand does not enter the nucleus of the cell—it stays in the cytoplasm and is degraded within a few hours—not only can it not affect a person's DNA, long term side effects from the vaccine are very unlikely.

Myth: COVID-19 was blown out of proportion; recovery from the illness could have occurred without vaccination.

The two-dose Pfizer-BioNTech COVID-19 and Moderna COVID-19 vaccines were approved for emergency use by the Federal Drug Administration (FDA) in 2020 and phased rollout began in December 2020. The Johnson & Johnson single-dose COVID-19 vaccine received the same emergency approval by the FDA in 2021. According to data reported by the National Institutes of Health (NIH), during the period from December 21, 2020 to May 9, 2021, COVID-19 vaccines prevented more than 139,000 deaths. Considering the approximately 570,000 persons who died due to COVID-19 by May 9, NIH researchers estimated about 709,000 deaths would have occurred without the vaccines. In addition to saving lives, the vaccines produced positive outcomes. Researchers estimated that the economic value of preventing these deaths was between $625 billion and $1.4 trillion.[5]

Myth: COVID-19 vaccines are not safe or effective for all populations because African Americans and other People of Color were not represented in the clinical trials.

During an interview with CNN in July 2020, Dr. Anthony Fauci was asked about diversity in the clinical trials for the Moderna vaccine. He responded saying it is desirable to have "…representation in the trial of those who are most at risk for adverse consequences of getting infected… African Americans and Latinx are at greater risk of not only getting infection but of having deleterious, negative severe consequences from getting infected."[6]

Speaking to the special importance of African American participation in the clinical trials, Oliver T. Brooks, MD, president of the National Medical Association emphasized, Black people

"…participating in trials could build vaccine confidence in communities that are most vulnerable to the virus by generating data that demonstrate safety and efficacy for people like them."[7]

At the time the clinical trials were underway, African Americans constituted 12 percent of the total U.S. population. Of the 30,000 study participants in the Moderna trials and the 43,000 in the Pfizer/BioNTech trials, Black people accounted for 10% of study participants in both study samples. Hispanic or Latinx people accounted for 18% of the total American population. This group comprised 20% of the study participants for the Moderna for trials, and 26% of trial sample for the Pfizer/BioNTech trials. The percentage for Asian clinical trial participants was 5% for Pfizer/BioNTech and Moderna, and 6% for Johnson & Johnson's clinical trials.[8]

These figures show that the number of African American and Latinx individuals who volunteered for the clinical trials for Pfizer/BioNTech, Moderna and Johnson & Johnson was not exactly equal to the share of each group's proportion of the national population. However, these proportions were very close to (and sometimes exceeded) the proportion in the nation, and provided an informed basis for the safety of the vaccines in these populations.

Reframing Vaccine Hesitancy Among African Americans

Recruiting and accepting greater numbers of people of color in studies for the COVID-19 vaccines will not necessarily eliminate doubts among African Americans that scientists, researchers, physicians and pharmaceutical companies motivated by profit will act in their best interests, even during a pandemic. For example, a review of protocols in Operation Warp Speed (federal guidelines for developing safe and effective vaccines by January 2021) did not include any guidelines specifying preferred samples sizes for minority groups.[9] This is the case for the Federal Drug Administration as well.[7]

Several studies have found high rates of COVID-19 vaccine hesitancy among African Americans and other marginalized populations. Numerous studies report vaccination rates in Blacks that are below the rates of White people.[10] For example, a Kaiser Health News report reveals that Black Americans were vaccinated at rates 2 to 3 times lower than White Americans in January of 2021.[11]

However, this and other studies with similar findings require "deep dive" questions reflecting the social and structural determinants of health on which the health inequalities that were so prevalent in Black communities before and during the pandemic are necessary. These analyses may uncover external factors, such as structural racism, that provide explanations regarding differences in vaccination rates among marginalized people of color and other populations. Such questions include but are not limited to:

- Are there factors other than race/ethnicity that explain vaccine reluctance within the Black population?
- What are the implications of these factors for decision making relevant to accepting or rejecting the COVID-19 vaccine?

Bauer defines vaccine hesitancy as "…a nebulous phase that refers to the black box of assorted reasons people cite for not getting the COVID-19 vaccine." Continuing, she makes the crucial point that the term singles out persons in a negative way, thereby suggesting that the possible decision to remain unvaccinated describes individuals who are uncaring or even meanspirited, when such characterizations do not apply.[12]

If the true aim of America's and Delaware's health care systems is to mitigate the factors that prevent persons from making sound, informed decisions regarding COVID-19 vaccination, then scientists, researchers, and physicians must broaden the lens through which to gain an accurate understanding of factors outside the person that explain behaviors and decisions relative to getting vaccinated.

Impact on Vaccine Mistrust Among African Americans

Past Atrocities in Medical Research

Black people who are informed about the Tuskegee Experiment wondered if COVID-19 vaccinations provided the government an opportunity to take advantage of a crisis to again intentionally expose and infect large members of group with a deadly virus in the name of medical research (even though we recognize the COVID vaccines cannot infect people with the virus). Sandra Crouse Quinn, a professor at the University of Maryland School of Public Health in College Park correctly observed that recollections, including the government's notorious Tuskegee syphilis study, are "still alive and well in people's memories."[7] In fact, polls show that Black individuals are less trusting of medical research than White or Hispanic people, including their attitudes about vaccines. Hence, health care policy makers and health providers cannot overlook the historical basis of the cynicism and mistrust toward the health professionals.

The public should be able to expect the health care system to employ every measure to protect every American from medical research abuses. While the U.S Code of Federal Regulations allows a waiver of the informed consent requirements of 45 CFR 46 in certain narrowly defined types of research in emergency situations,[13] bypassing the informed consent process presents potential harm to not only African Americans, but all Americans.

Institutionalized Racism in Health Care

The fact that health care leaders are acknowledging that structural determinants of health are casting a dark shadow over public health in Delaware is somewhat encouraging. After listening to the stories of a Delawarean who experienced implicit bias by her health care provider, Dr. Kara Odom Walker, former Delaware Secretary of Health and Social Services said, "[t]heirs and others' stories, including my own, underscore the reality of health disparities that will continue to exist unless we all contribute understanding and work to eliminate systemic racism."[14] Medical organizations and Delaware legislators are acknowledging race as a social determinant of health. In 2021, Dr. Rochelle P. Walensky, Director of the Centers for Disease Control and Prevention (CDC) declared that the inequalities the pandemic exposed, "…were not a result of COVID-19. Instead, the pandemic illuminated inequities that have existed for generations and revealed for all of America a known, but often unaddressed, epidemic impacting public health: racism."[15]

Research conducted in Delaware before the pandemic clearly highlighted the interconnection of race and the health status of African Americans. The findings in one study showed that non-Hispanic Black Delawareans had the highest adjusted mortality rate for seven of the top ten causes of death between 2014 and 2018. The most common comorbidities associated with COVID-19 were hypertension, obesity, and diabetes, all of which disproportionately impacted Black and Hispanic/Latinx Americans in the U.S. and Delaware.

Director Walensky's powerful statement challenges Delaware's health care system to organize Delaware's response to the health inequalities that impacted African Americans before and

following COVID-19 with the goal of redressing the social injustices apparent in public health in the State. Accepting this orientation as a framework for designing and delivering health care would make public health in Delaware an arbiter for social justice. The consequences of such an approach could appreciably reduce or even eliminate the institutionalized racism in health care regularly encountered by African Americans, as well as repair the group's mistrust of the health system.

Being Black should not be a predictor for vaccine hesitancy. Rather, an analysis of this phenomenon should be expanded to include a consideration of the ways social and structural determinants of health could explain the choices African Americans and other marginalized groups make relative to vaccination for COVID-19.

Consistent with this perspective, a recent study with a sample of 1200 American adults hypothesized that Black individuals would show less willingness to agree with vaccination when COVID-19 vaccines were first introduced.[16] The decision to get vaccinated would increase more rapidly over time in this population compared with White individuals. The study found that COVID-19 vaccine hesitancy decreased more rapidly among Black individuals than among White individuals since December 2020. A key factor associated with this pattern seemed to be the fact that Black individuals more rapidly came to believe that vaccines and vaccination were necessary to protect themselves and their communities.

The researchers described a major outcome of the study in the following manner:

> "Black individuals in the U. S. are cautious in their use of novel medical technologies for good reason—the history of abuse by medical and research communities is real—but they are just as likely as White individuals to embrace vaccination once they are convinced that vaccines are safe, effective, and necessary. Vaccine mistrust grounded in community experiences of racism might therefore be characterized not as resistance to protective health behavior but instead as an expression of commitment to protective health behavior."[16]

Conclusion

The COVID-19 vaccine provides opportunities and challenges to the nation and Delaware to improve the health care system, and for it to eliminate barriers to health and well-being for African Americans.

The aim of this commentary was to dispel some of the popular misconceptions surrounding the COVID-19 vaccines that continue fuel the debate and controversy about their safety, effectiveness and necessity. It can be used to address misconceptions held by patients, members of the community, and others who interact with Persons of Color who have questions about the COVID-19 vaccines, or are unwilling to be vaccinated.

There are many methods of addressing the extant health disparities that existed before, and were exacerbated by, the pandemic; repairing the mistrust harbored by African Americans and other marginalized communities towards the health care systems and the professionals with whom they interface; and insuring protection from unethical medical research practices. These methods include:

1. Increase the number African American and Hispanic/Latinx health care staff, including doctors, nurses, and boots on the ground community workers. A paper written by Delaware physicians and researchers advocating a proactive initiative to diversify health care staff noted that doctors who are African American, or represent other racial ethnic groups, increase the likelihood that high quality care will be provided to underserved populations and people of color.[17]

2. Develop and mobilize a corps of frontline, boots on the ground community workers to enhance access to COVID-19 vaccines and related services. Assignments include, but are not limited to, disseminating clearly presented information regarding the COVID-19 vaccines (e.g., safety, effectiveness) to residents and in community settings where target populations come together for church, recreation, etc.; distributing masks and test kits; and providing transportation to testing sites.

3. Connect researchers to the community in ways modeled by the Community and Engagement Outreach Core (CEO), a component of the DE-CTR ACCEL project. The CEO is a mechanism and structure that gives priority to the voice of the community and patient. This and similar programs that bring community and researchers together can go a long way in diminishing the mistrust between African Americans and other people of color and the health system.

4. Involve the community in conducting research (experimental, quasi experimental, qualitative, quantitative, etc.) that examines the accessibility of healthcare. Study questions should include: how has accessibility of health services in the past impacted specific groups? What are the health impacts associated with barriers to access (transportation, shortage of healthcare staff related to COVID-19 specific health needs, etc.)? Are COVID-19 vaccines available in accordance with demand? For whom? Since when? Who is distributing them? Location?[18]

5. Assess and develop cultural competence and awareness among health care staff through special required programs. In a presentation sponsored by the Washington Thoracic Society, Dr. Benjamin Danielson made this statement, "[a]s we look into and understand the history of vaccination, we trace a lot of those back to the African continent and the lessons learned about inoculation that have come from practices that go back many centuries. African Americans hold their own strong history in the promotion and development of vaccines in different ways."[19] An enslaved African, Onesimus, is generally credited with introducing the process of inoculation (or variolation) to Cotton Mather as a method to prevent smallpox. Mather is regarded as the person who introduced inoculation to the colonies, setting the stage for vaccination against smallpox in the 1721 epidemic.[20]

6. Provide training about the culture-based healing practices of the diverse ethnic and racial populations most impacted by COVID-19, and methods for integrating this content into health care practices and medical research.

7. Establish community engagement programs in each county to obtain input from community members regarding effective strategies for increasing access to heath care services and mitigating health disparities. Community members should not

only hold major roles in designing, implementing and evaluation such an initiative but, should also receive compensation.[3]

8. Work with institutional review boards at every level, and include community members, with the specific purpose of ensuring an informed consent process that does not allow subject participation in a research project without his or her implicit, informed consent.

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References

1. Pennington, M. (2021, Jul). Vaccine hesitancy: a story as old as vaccines themselves. *Eureka A Dose of Science.* Retrieved from https://www.criver.com/eureka/vaccine-hesitancy-story-old-vaccines-themselves
2. The College of the Physicians of Philadelphia. (n.d.). The history of vaccines. Retrieved https://www.historyofvaccines.org/timeline
3. Solomon, D. (2021, Feb). Vaccine refusal in the time of COVID-19: Opportunities for community engagement & research [Presentation]. Community Research Exchange, Newark, DE.
4. Centers for Disease Control and Prevention. (2021, March). Everything you should know about the COVD-19 vaccines [Video]. https://youtu.be/pL-B30EXBEc
5. National Institutes of Health. (2021, August). Vaccines prevented up to 140,000 COVID-19 deaths. https://www.nih.gov/news-events/nih-research-matters/vaccines-prevented-140000-covid-19-deaths-us
6. CNN. (2020, July). Here's what Fauci thinks about the latest COVID-19 vaccine trial [Video]. https://youtu.be/NK3W5IPE9Oc
7. Jaklevic, M. C. (2020, September 1). Researchers strive to recruit hard-hit minorities into COVD-19 vaccine trials. *JAMA*, *324*(9), 826–828. PubMed https://doi.org/10.1001/jama.2020.11244
8. Goldon, S. H. (2022, Mar 10). COVID vaccines and people of Color. Johns Hopkins Medicine. https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/covid19-vaccines-and-people-of-color
9. Government Accountability Office. (2021, Feb 11). Operation warp speed: Accelerated COVID-19 vaccine development status and efforts to address manufacturing challenges. GAO 21-319. https://www.gao.gov/products/gao-21-319
10. Wang, S. X., Bell-Rogers, N., Dillard, D., & Harrington, M. A., & the FNP-c. (2021, September 27). COVID-19 vaccine hesitancy in Delaware's underserved communities. *Delaware Journal of Public Health*, *7*(4), 168–175. PubMed https://doi.org/10.32481/djph.2021.022
11. Recht, H., & Weber, L. (2021). Black Americans are getting vaccinated at lower rates than White Americans. Kaiser Health News. https://khn.org/news/article/black-americans-are-getting-vaccinated-at-lower-rates-than-white-americans/

12. Blauer, B. (2021). Vaccine hesitancy involves more than distrust in science & government. Johns Hopkins University & Medicine. https://coronavirus.jhu.edu/pandemic-data-initiative/data-outlook/vaccine-hesitancy-involves-more-than-distrust-of-science-and-government
13. Waiver of Informed Consent Requirements in Certain Emergency Research, 45 CFR § 46. (1996).
14. Bo, C. (2020, Nov 17). Racism is a public health crisis – and Delaware must confront it. *The News Journal*. https://www.delawareonline.com/story/opinion/2020/11/17/delaware-must-confront-racism-public-health-crisis/6313931002/
15. Milken Institute School of Public Health. (2021, Oct 22). Racism is a public health crisis. https://onlinepublichealth.gwu.edu/resources/racism-public-health-crisis/
16. Padamsee, T. J., Bond, R. M., Dixon, G. N., Hovick, S. R., Na, K., Nisbet, E. C., . . . Garrett, R. K. (2022, January 4). Changes in COVID-19 vaccine hesitancy among Black and White individuals in the US. *JAMA Network Open*, *5*(1), e2144470. PubMed https://doi.org/10.1001/jamanetworkopen.2021.44470
17. Mitchell, K., Iheanacho, F., Washington, J., & Lee, M. (2020, August 13). Addressing disparities in Delaware by diversifying the next generation of Delaware's physicians. *Delaware Journal of Public Health*, *6*(3), 26–28. PubMed https://doi.org/10.32481/djph.2020.08.008
18. Knight, K. (2022, Feb 10). Stop conflating COVID-19 vaccine access with 'hesitancy:' Government can protect the right to health care by removing barriers. Human Rights Watch. https://www.hrw.org/news/2022/02/10/stop-conflating-covid-19-vaccine-access-hesitancy
19. Danielson, B. (2020). COVID-19 vaccine hesitancy in BIPOC communities. Presentation at the WA Thoracic Society [Video]. https://youtu.be/L3t_2iBCAPM
20. Blakemore, E. (2021, Apr 8). How an enslaved African man in Boston helped save generations from smallpox. History.com. https://www.history.com/news/smallpox-vaccine-onesimus-slave-cotton-mather