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Comment on Factors Influencing the Transmission of Influenza 0920-0888 Extension 2020-22489

Centers for Disease Control and Prevention

The study and understanding of disease will always be important to enhance national and global public health. The study "Factors Influencing the Transmission of Influenza" will add to our knowledge of influenza and improve the world's public health. Influenza has killed millions of people across the globe throughout history. In 1918 a pandemic killed approximately 50 million people. Influenza pandemics have also occurred in 1957, 1968, and 2009 (Lycett et al. 2019, p.3). It is only a matter of time until we see another influenza pandemic. COVID-19 has demonstrated that we must always be prepared for the worst-case scenario, requiring the best possible disease knowledge. When we understand how a virus spreads, we have a better chance of slowing it down and reducing morbidity and mortality. Our understanding of the spread of influenza will help in a pandemic and improve public health during the flu season. In 2018-2019 35.5 million people were estimated to have been sick with influenza, and 34,200 died (*Estimated Influenza Illnesses,* 2020). Understanding how it is spread is of paramount importance to reduce the number of people who get sick and die from this disease deaths.

Furthermore, this study mentions healthcare workers and their ability to stay safe while fighting this disease. The results of this study will inform healthcare workers of the best actions they can take to protect their own health and control infection rates. This study is different than others on the airborne particle transmission of influenza. Other studies do not take the air sample and compare them to the blood biomarkers creating a gap in the literature. Gralton et al. (2013) studied the detectability of influenza RNA in airborne particles. The study used breathing and coughing exercises to see if they could detect airborne virus, which they did (Gralton et al., 2013). Lindsley et al. (2012) looked at the quantity and size of airborne particles produced by patients while they had the disease and afterward. Xie et al. (2019) looked to detect virus particles in a university (a non-healthcare setting). The study found that influenza can be detected in high frequencies in areas other than healthcare settings (Xie et al., 2019). These studies are a small sample of the general state of research on airborne influenza transmission.

I have included these studies to show that there is a lot of good research on influenza and its airborne particles but what NIOSH is doing in this study is new. The study design is excellent for truly understanding not only that influenza can be transmitted through airborne particles but quantify the amount of virus as well. Other studies do not take the biomarkers in the blood into account. The addition of this measurement will allow for an understanding of just how transmissible the disease is under specific circumstances. As mentioned before, this can inform and improve the work done by health professionals.

The study is estimated to cost 148 annualized burden hours, and I would argue that that is worth what the data from this study will do for healthcare workers. Marshall et al. (2011) was a study of the risk to healthcare workers due to H1N1 in 2009. The authors found that 17.7% of healthcare workers "demonstrated evidence of infection (Marshall et al., 2011, p. 1002)." The danger to healthcare workers is that they are not immune to the disease and they need the best chance to work without contracting the disease. A loss of 17% of healthcare workers would place

a huge burden on our public health system. This can be avoided through increased knowledge of disease transmission and by creating policies to protect healthcare workers. Russell et.al. (2015) found that when healthcare workers were given a guidance summary card for understanding transmission-based infection control precautions, their success rate in clinical situations increased (p. 238-239). Russell et al. (2015) show that healthcare professionals do better when they have improved information to work with. Adding to their toolbox can only help in the case of influenza. The time spent on this study is well worth it.

Today with COVID-19, more people understand the need for disease research and appreciate the role healthcare professionals play in our society. It is now understood more broadly in the public that disease research is needed and will continue to be needed to stop another pandemic. The ever-evolving output of research on how to stay safe during the current pandemic has led to Americans changing their lives to "prioritize their health (Henderson, 2020)." People want to know how to keep safe, and they want this information to be accurate and complete. I have seen this happen throughout the pandemic. Along with my family and friends, I have followed what research says about how to protect ourselves, and we do those things. People also want their healthcare workers to be safe and try to support them in as many ways as possible. People go out of their way to celebrate healthcare workers, such as the San Ramon Rotary Club, that created a public show of support for healthcare workers (Degan, 2020). This kind of celebration is not an isolated incident. I have seen many news outlets feature health professionals and the people who are celebrating them. People support the research being done into infectious diseases and the people who care for those who become infected. The research NIOSH is doing is important, and it has the public's support; at the very least, it has my support.

The research into influenza proposed by the CDC and conducted by NIOSH is important and should continue. Influenza is not going anywhere anytime soon, and we need to know as much about it as possible to improve our public health capabilities. This study fills a gap in the literature that will inform future public health decisions, and it is worth doing. The research that is being done is important to all people's health and should continue.

Sincerely,
Tobiah Passett

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