

In This Issue

Omar A. Khan, MD, MHS¹ and Timothy E. Gibbs, MPH²

1. Editor-in-Chief, Delaware Journal of Public Health

2. Publisher, Delaware Journal of Public Health

Over the centuries of recorded history public health has enjoyed some significant advances. We credit ancient Rome with infrastructure that includes roads, sewers, and running water; ancient Egypt with irrigation. In ancient China, during the Qin dynasty (221 – 206 BC), an integrated response system for infectious disease was established that included prevention, diagnosis, and isolation. Vaccination efforts first occurred during the Song Dynasty (960 – 1279 A.D.).¹ If you are surprised by this fact, you are not alone. The western world's point of view is that Edward Jenner founded vaccinology in 1796.²

Fast forward to today, the science of vaccinology has advanced in a myriad of ways – so much so that the rapid development of a COVID-19 vaccine was met with skepticism by some who may not have appreciated just how long foundational advances had been in the works.

Cholera illustrates this point from a historical and contemporary perspective. Observed for centuries as a diarrheal illness, the causative organism was discovered twice; independently by Pacini in Italy and Koch in India, both in the 1800s. Causing tremendous morbidity and mortality, it was a disease of sub-par sanitation practices, and at one point in time affected London and Florence as much as it did Calcutta. Yet, while we regard cholera vaccines to be a recent phenomenon, they were actually tested by Pasteur and others in the 1800s. It wasn't until the 1990s that oral vaccines became generally available: Dukoral and Shanchol, both recognized by the World Health Organization, followed by Vaxchora, the only cholera vaccine with US FDA approval.

While social media messages around vaccine misconceptions may vex public health folks, in fact, social media has also been leveraged as tool to get people vaccinated. We have done this by communicating basic science, culturally competent messaging, and the locations and times of testing and vaccination events. There is a theoretical framework³ called the 5Cs that goes much further in explaining the psychological considerations that impact individual level behavior leading to vaccine acceptance or hesitancy. Those 5 Cs include Confidence (importance, safety, and efficacy of vaccines); Complacency (perception of low risk and low disease severity); Convenience (access issues dependent on the context, time and specific vaccine being offered); Communications (sources of information); and Context (sociodemographic characteristics).⁴

Since so much of vaccination and disease epidemiology has to do with community engagement and outreach, we wish to direct the reader's attention to the annual [ACCEL Community Research Exchange](#) conference on May 9, 2022. Organized by the NIH-funded Delaware Clinical & Translational Research Program, attendance is free, and the extensive program includes many opportunities for scientists, policy makers, and community members to engage with Delaware's health issues.

With this introduction in mind, we hope that you enjoy this issue of the Journal. It includes a special section on the National Institutes of Health "All of Us" research program in which we hope you might consider becoming a partner, or recommending as much to your clients, patients, friends and family.

References

1. Huigang, L., Xiaowei, X., Cui, H., Haixia, M., & Zhiming, Y. (2020, March). A brief history of the development of infectious disease prevention, control, and biosafety programs in China. *Journal of Biosafety and Biosecurity*, 2(1), 23–26. <https://doi.org/10.1016/j.jobb.2019.10.002>
2. The Immunisation Advisory Centre. (2020, Jan). A brief history of vaccination. Retrieved from <https://www.immune.org.nz/vaccines/vaccine-development/brief-history-vaccination>
3. Betsch, C., Schmid, P., Heinemeier, D., Korn, L., Holtmann, C., & Böhm, R. (2018, December 7). Beyond confidence: Development of a measure assessing the 5C psychological antecedents of vaccination. *PLoS One*, 13(12), e0208601. [PubMed <https://doi.org/10.1371/journal.pone.0208601>](https://doi.org/10.1371/journal.pone.0208601)
4. Razai, M. S., Oakeshott, P., Esmail, A., Wiysonge, C. S., Viswanath, K., & Mills, M. C. (2021, June). COVID-19 vaccine hesitancy: The five Cs to tackle behavioural and sociodemographic factors. *Journal of the Royal Society of Medicine*, 114(6), 295–298. [PubMed <https://doi.org/10.1177/01410768211018951>](https://doi.org/10.1177/01410768211018951)

Copyright (c) 2022 Delaware Academy of Medicine / Delaware Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.