**Select High-Impact Publications by Scientist Officers in 2021**

*Contributed by LCDR Tia Rogers, LCDR Marisa Hast, LCDR Francis Annor, LCDR Jayleen Gunn, LCDR Emily Mosites, and CDR Sharyn Parks Brown*

**BACKGROUND AND OBJECTIVE.** Publishing impactful research to fill important knowledge gaps is one of the many ways PHS Scientist Officers regularly contribute to the missions of agencies to which USPHS Commissioned Corps officers are assigned. Earlier this year, the SciPAC Visibility Subcommittee’s Publications Team collaborated with the Science Subcommittee’s Bibliography Team to identify and systematically compile Scientist Officer publications from calendar year 2021 (January 1–December 31, 2021).

**METHODS.** In March 2022, the Visibility Subcommittee Publications Team and the Science Subcommittee Bibliography Team put out a call to the 415 rostered Scientist Officers to share their list of publications for 2021. In July 2022, a list of publications authored by Scientist Officers who did not respond to the original call was generated using an R script to automate queries of the PubMed database. This list was systematically verified and deduplicated by both teams to produce the comprehensive list of Scientist Officer publications for 2021. Members of the Publications Team carefully reviewed the full list and voted to highlight 10 high-impact publications with a PHS Scientist Officer first author.

**RESULTS.** One hundred Scientist Officers responded to the initial call for publications. Between self-report and the web-based query and verification process, a total of 233 Scientist Officers were identified as having published 660 manuscripts during 2021. Of those, 116 were publications with a PHS Scientist Officer first author. These publications span diverse public health topic areas, however COVID-19 was the most common topic among PHS Scientist publications with a total of 192 related manuscripts.

*Figure. Word Cloud illustrating the top 50 terms captured from 660 publication titles, as authored by Scientist Officers in 2022. Font sizes are weighted to word frequency.*
Below is a subset of publications from 2021 for which Scientist Officers served as the first author, as evaluated and selected by the Publications Team for their novelty, impact, and significant scientific contributions. These works provide a brief glimpse into how the Scientist Category is at the forefront of conducting and disseminating research of regional, national, and international public health importance. PHS Scientist Officers are bolded for emphasis.


LCDR Razzaghi and colleagues assessed receipt of COVID-19 vaccines among pregnant women and noted that within the first few months of vaccine availability, 16.3% of pregnant women had received ≥1 dose of a vaccine. Receipt of ≥1 dose was lowest among racial/ethnic minorities. LCDR Razzaghi noted the need for improved outreach to and engagement with pregnant women, especially those from racial/ethnic minority groups who might be at higher risk for severe health outcomes because of COVID-19.


LCDR O’Donnell and colleagues described trends of overdose deaths involving illicitly manufactured fentanyls (IMFs) using data from CDC’s State Unintentional Drug Overdose Reporting System. The study found that IMF-involved deaths increased sharply in midwestern, southern, and western jurisdictions of the US during 2019-2020. Authors concluded that adapting and expanding overdose prevention, harm reduction, and response efforts is urgently needed to address the high potency, and various routes of use for IMFs.


LT Salvatore and colleagues examined the relationship between cycle threshold (Ct) values of viral RNA and key epidemiologic characteristics of SARS-CoV-2 infections. Authors found that Ct values were lowest (indicating more viral RNA) within the first 7 days after symptom onset compared with 21 days after onset, and among participants with respiratory symptoms compared to those without respiratory symptoms. Their findings underscored the need for early SARS-CoV-2 testing and isolation among persons with symptoms of respiratory illness when viral shedding is at its highest levels.

CDR Parks Brown et al. found that although ≥72% of sudden unexplained infant deaths (SUID) occurred in unsafe sleep circumstances, only 18% could be explained as suffocation deaths. Furthermore, 75% of airway obstruction deaths were attributable to soft bedding. Continued analyses and improvements to infant death investigation and documentation can advance our understanding of infant at highest risk of SUID.


CDR Yard et al. analyzed national syndromic surveillance data to determine that emergency visits for attempted suicide among girls aged 12-17 were 51% higher in early 2021 during the COVID-19 pandemic compared to the same period in 2019. The authors recommend a comprehensive approach to suicide prevention that can be adapted during times of disruption to prevent suicide among youth.


CDR Boehmer et al., demonstrated that patients with COVID-19 had nearly 16 times the risk for myocarditis compared to patients without COVID-19. This study provided valuable context for interpreting myocarditis risk after COVID-19 vaccination and highlighted the importance of COVID-19 prevention strategies, including vaccination, to reduce the public health impact of COVID-19 and its complications.


LT Deputy and colleagues studied the link between the age when youth start misusing prescription opioids and later misuse. He found more than 6% of students first misused prescription opioids at age 14 or younger, and younger age at first misuse increased likelihood of recent misuse. His results underscore the importance of age-appropriate substance use prevention programs during early adolescence.

**CDR Zapata** and colleagues examined unintended pregnancy risk and contraceptive services need among women aged 18-49, finding 76.2% of women to be at risk for unintended pregnancy. Although 60.7 % of women needed contraceptive services, 30.3% were not using any contraception method. These findings inform jurisdictional planning to deliver contraceptive services, reduce unintended pregnancies, and evaluate efforts to increase access to contraception.


**CAPT Toblin** and colleagues compared Federal Bureau of Prison (BOP) inmate testing, case, and mortality rates for COVID-19 to those of the US. They found that BOP tested approximately half of inmates and that COVID-19 case rates and standard mortality ratio among inmates were approximately 5 and 2.5 times those in U.S. adults, respectively. Testing and other mitigation strategies have likely prevented further transmission and mortality in BOP.


**CDR Hollis** and colleagues examined disparities in U.S. SARS-CoV-2 incidence by race/ethnicity, age, and sex, between January 1–October 1, 2020. Authors found that Hispanic/Latino and non-Hispanic Black, American Indian/Alaskan Native, and Native Hawaiian/other Pacific Islander persons had a substantially higher incidence of infection than non-Hispanic White persons. Monitoring these disparities is critical for guiding action to reduce health inequities.