Received: 12 January 2023 | Revised: 9 February 2023 | Accepted: 16 February 2023
DOI: 10.1002/ajhb.23886

COMMENTARY

American Journal of Human Biology WILEY

Consequences of delayed care during the COVID-19 pandemic: Emerging research and new lines of inquiry for human biologists and anthropologists

Taylor P. van Doren[1] | **Ryan A. Brown**[2]

[1]Sitka Sound Science Center, Sitka, Alaska, USA
[2]RAND Corporation, Santa Monica, California, USA

Correspondence
Taylor P. van Doren, Sitka Sound Science Center, Sitka, AK, USA.
Email: tvandoren@sitkascience.org

Funding information
National Science Foundation RAPID grant #2030653

Abstract

Objective: Research regarding ongoing epidemic or pandemic events is often proximate, focusing on the immediate need to understand the epidemiology of the outbreak and the populations at highest risk for negative outcomes. There are other characteristics of pandemics that can only be uncovered after time has passed, and some long-lasting health consequences may not be directly linked to infection with or disease from the pandemic pathogen itself.

Methods: We discuss the emerging literature on observations delayed care during the COVID-19 pandemic and the potential population health consequences of this phenomenon in postpandemic years, especially for conditions such as cardiovascular disease, cancer, and reproductive health.

Results: Delayed care has occurred for various conditions since the beginning of the COVID-19 pandemic, but the drivers for those delays have yet to be thoroughly investigated. While delayed care can be either voluntary or involuntary, the determinants of delayed care often intersect with systemic inequalities that are important to understand for pandemic responses and future preparedness.

Conclusion: Human biologists and anthropologists are well poised to lead the research on postpandemic population health consequences of delayed care.

1 | INTRODUCTION

Contemporary studies of pandemics are often discussed in terms of the number of cases or deaths and the nature of pathogen transmission during their progression, but rarely in terms of the impacts they have on the health of the surviving population. This is likely due to the proximity of research to the pandemic itself, as the bulk of research related to any given epidemic is dedicated to describing its epidemiology while it unfolds to inform rapid response public health plans. However, there may be many more characteristics of a pandemic that can only be uncovered after time has passed or the initial threat of the pandemic has subsided. Anthropological research on past pandemics (i.e., the Black Death and the 1918 influenza pandemic) has provided information on how pandemics influence post-pandemic population health, with special interests in demographic evolution (DeWitte & Wissler, 2021), selective mortality (van Doren & Sattenspiel, 2021), and survivorship (Kelmelis & DeWitte, 2021; van Doren & Kelmelis, 2022; Wissler, 2021). Other epidemiological and demographic work has identified the long-term demographic and health impacts on age-based patterns of respiratory mortality (Saglanmak et al., 2011) and life expectancy (Noymer & Garenne, 2000). This work covers the significant and long-lasting population health consequences in the wake of a pandemic that are not directly linked to mortality from the infectious disease during the pandemic, indicating there are many more factors contributing to post-pandemic population health than the proximate disease itself.

It is now clear that COVID-19 disease, caused by the novel SARS-CoV-2 virus, can be comorbid with many other infectious and chronic diseases and can result in the accelerated degradation of health beyond what would be expected without the added complications of COVID-19 (Al-Quteimat & Amer, 2020; Khouchlaa & Bouyahya, 2020; Nishiga et al., 2020). The question of COVID-19 comorbidities with other infectious diseases, chronic diseases, and socioecological contexts has already been taken up by anthropologists and others through the lens of syndemic theory (Singer et al., 2021; Singer & Rylko-Bauer, 2020), so we will not dwell on it here. In addition, there is now the widely observed phenomenon and new clinical designation of "Long COVID," which is a condition characterized by long-lasting symptoms of COVID-19 disease beyond that of the acute respiratory syndrome, often resulting in permanent disabilities (Callard & Perego, 2021). Human biologists and anthropologists are well poised to investigate the population health effects of COVID-19 comorbidities and Long COVID. However, human biologists and biological/biocultural anthropologists must also consider the indirect consequences of the COVID-19 pandemic by looking more closely at how general delays in medical care for non-COVID-related issues additionally contribute to post-pandemic population health consequences. Purposeful investigation of more indirect influences on population health will be an important addition to our cumulative understanding of how pandemics leave their mark long after the disease itself no longer poses a direct threat.

2 | EARLY OBSERVATIONS OF DELAYED CARE

Data that pointed toward delayed care emerged almost immediately in the early phases of the COVID-19 pandemic. In spring 2020, the Centers for Disease Control and Prevention published their *Weekly Morbidity and Mortality Report* that observed there were 24 000 excess deaths from March to May 2020 compared with the number of expected deaths in a non-pandemic period; it was first suggested that this relatively large number of all-cause excess mortality could be attributed to people choosing not to enter medical centers due to fear of exposure to the new pandemic pathogen (Olson et al., 2020). Shortly after this report, more evidence emerged that supported the early initial explanation: from March to April 2020, there was a 42% decrease in emergency room visits compared with the same weeks in 2019 (Hartnett et al., 2020).

In the time since, researchers have reported significant delays in care for many different conditions, but especially those that are leading causes of death in the US, like cancer and cardiovascular disease. For example, a cross-sectional survey found that 48% of patients deferred care for preventive services and 30.2% of those patients were concerned about the health effects (Atherly et al., 2020); a longitudinal study of ~1200 cancer patients in the US found that 47% reported delaying care for their cancer even though 94% considered themselves high risk for COVID-19 (Caston et al., 2021); a study of over 5000 cancer patients in the Netherlands found that 30% of patients delayed care, with 30% reductions in chemotherapy and 32% reductions in immunotherapy (de Joode et al., 2020); in Denver, 18.4% of myocardial infarction patients refused emergency transportation in 2020 compared with only 8% in 2019 (Clodfelder et al., 2022); in the US, in-person cardiology visits dropped by 60% in some parts of the country, with 50% reductions in blood pressure evaluations and 38% reductions in cholesterol screenings (Duffy et al., 2021); and a cross-sectional study of 500 pregnant people in France found that 23.4% voluntarily postponed or skipped at least one pregnancy checkup during lockdown (Doncarli et al., 2021).

Outside of the US and Western Europe, there are concerns about delayed care and its consequences in relation to reproductive and maternal health. Limited access to reproductive healthcare in Kenya contributed to higher maternal mortality from unsafe abortion, infection, pre-eclampsia, postpartum eclampsia, and hemorrhage, that has led to some setbacks in hard-fought improvements in reproductive health, especially in rural areas (Thorne et al., 2020). Similar studies report regression in maternal and reproductive care in Zimbabwe (Murewanhema et al., 2020), Uganda (Burt et al., 2020), and Ethiopia (Abdela et al., 2020). While the number of studies that explicitly seek to quantify delays in care remains small, the volume of the reported samples who indicate that they have delayed care is large, and therefore warrants careful attention in the coming years.

3 | DETERMINANTS OF DELAYED CARE DURING THE COVID-19 PANDEMIC

The concept of delayed care has not been broadly studied in many sociocultural contexts or for all potential conditions. Indeed, most of the work published thus far has been in the form of clinical reports with little discussion of the underlying structural and sociocultural drivers of the phenomenon, and the observations have mostly focused on data from the United States. Thus, there are clear points of intervention for multi- and interdisciplinary lines of inquiry to better understand the determinants and consequences of delayed care in other contexts. Clinical observations are important starting points, but the multidimensional understanding of social drivers of population health and biology can motivate integration of theory and methods for more holistic public health interventions in a future that will inevitably include a new pandemic threat.

Discussions accompanying existing research of published work on delayed care so far point toward four potential reasons for delayed care. First, *public health mandates* such as social distancing, pauses in "non-emergent" procedures, and lockdowns prevented people from accessing medical institutions (Ashkenazy et al., 2021; Beran et al., 2020). Second, *overburden of medical institutions* with cases of COVID-19 limited resources to dedicate to other patients (Blay et al., 2021; Lei & Maust, 2022). The first and second explanations presented here can be characterized as *involuntary care disruption* (Callison & Ward, 2021), since they are not driven by patients' behaviors, but rather the decisions of institutions and the overwhelming burden of the pandemic on medical resources during pandemic peaks. Third, *personal choices* regarding whether to enter facilities that could put individuals at risk of exposure to COVID-19, especially in risk assessments and reflections on their own health that may have led to fear of becoming sick with COVID-19 in clinical settings (Caston et al., 2021; Lusambili et al., 2020). Finally, we must acknowledge that a potentially consequential determinant of delayed care is that patients who themselves are sick with COVID-19 must delay care for other health conditions due to their own illness and quarantine responsibilities. One of the primary points of this article is to elevate the *indirect* consequences of a pandemic on postpandemic population health (i.e., individuals do not necessarily have to have experienced COVID-19 disease or been infected with SARS-CoV-2 to face health consequences of the pandemic); therefore, we will focus on the former three determinants in the remainder of this discussion. However, there is substantial need for further research including the experience of COVID-19 disease and comorbidities as a determinant of post-pandemic health.

These four categories of determinants have not been systematically organized or validated, but an important observation arising from these causal categories is that most of the underlying determinants of delayed care lie outside of a patient's control, that is, they are involuntary. However, there may be many other reasons why care was delayed during the COVID-19 pandemic that could be categorized as "involuntary" that have nothing to do with public health mandates or overburden of medical institutions, namely determinants that intersect with inequalities that prevent people from accessing healthcare. Human biologists and anthropologists can take care to discuss complex determinants and consequences of delayed care within the contexts of how different social inequalities that can lead to stigma in a medical setting [-e.g., socially constructed race categories (Gravlee, 2009, 2020), marginalized sex and gender identities (DuBois & Shattuck-Heidorn, 2021; Gibb et al., 2020), or people categorized as overweight or obese (Brewis & Wutich, 2019)] contribute to unequal reception of appropriate healthcare administration. A holistic perspective of healthcare access within the pandemic context will provide a more nuanced view of delayed care observations, while additionally shifting blame away from patients for "delaying" care when there are persistent systemic barriers to access.

Anthropologists with holistic understandings of how biology and culture interact to influence health could assist in disentangling the behavioral and cultural determinants of care that was sought (but ultimately delayed) from other structural determinants like public health mandates and overburden of medical institutions. Conceptual frameworks may include considerations of proximate versus ultimate determinants of delayed care, for example, individual patients' motivations versus institutional and other systemic barriers to accessing care. Thus, instead of the four apparently independent categories of determinants of delayed care discussed above, more critical analyses from theory-driven fields like biological and biocultural anthropology or other fields with strong interests in population health (such as sociology and demography) will yield a multidimensional framework for understanding pathways of delayed care and post-pandemic health in cross-cultural contexts.

The determinants of delayed care outlined above are clearly linked with human behavior, which in turn is determined by social norms, risk assessments, ambient social conditions (including socioeconomic status), and environment (e.g., does the environment lend itself to rural communities' access to medical centers?). Thus, biocultural analyses of the indirect consequences of the COVID-19 pandemic on population health are appropriate and warranted, but not yet widely taken up by human biologists or anthropologists. Research surrounding infectious disease pandemics are, in general, underrepresented in the biological/biocultural anthropology literature despite the interdisciplinary interests and expertise of such scholars to contribute to understanding human health in relation to pandemics (Dimka et al., 2022). However, investigations of the consequences of delayed care on population health, broadly construed but with many opportunities for specific foci, is a fruitful new avenue for interdisciplinary biological and social science research, especially since it represents a potentially invisible and indirect determinant of post-pandemic population health. A biocultural approach of acute and/or persistent stressors, like pandemic events, further sheds light on the reality that modern population health does not exist in isolation from its past, and there are strong elements of demographic change and biosocial inheritance that need to be more closely investigated (Hoke & McDade, 2015; van Doren, 2021). It is not necessary for a SARS-CoV-2 infection or COVID-19 disease to be present for people to experience consequences of postponing or skipping routine or emergent health care monitoring and procedures, especially for conditions like high blood pressure, cancers, or diabetes that charge interest on the body if uncontrolled.

4 | CONCLUSION

By turning attention toward the issue of the consequences of delayed care, one of the takeaways may be that the impacts of a pandemic event are larger than we previously conceived. However, it is essential to know both direct and indirect pandemic consequences for more comprehensive pandemic preparedness plans and for adaptive policies that consider a wide variety of direct and indirect pandemic-related risks. While it may still be too soon for ample availability of data to observe large-scale, population-level health consequences that are distinct from a pre-pandemic population health level, researchers can engage with available clinical data to determine *if* delays occurred, and initiate community-centered research programs that engage with people to explore *why* these delays occurred during the COVID-19 pandemic. By looking deeper into how delayed care contributes to post-pandemic population health, we can better understand how pandemics may represent inflection points in population health and how public health and medical infrastructure adjust pandemic responses to improve health outcomes and reduce disparities.

AUTHOR CONTRIBUTIONS

Taylor P. van Doren conceptualized the article, and drafted, revised, and approved the final manuscript. Ryan A. Brown provided critical comments and revisions and approved the final manuscript.

ACKNOWLEDGEMENTS

The authors would like to thank Dr. Elliot Bruhl for early discussions of the topics presented in this paper.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts to report.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

ORCID

Taylor P. van Doren https://orcid.org/0000-0002-3827-6550

REFERENCES

Abdela, S. G., Berhanu, A. B., Ferede, L. M., & van Griensven, J. (2020). Essential healthcare services in the face of COVID-19 prevention: Experiences from a referral hospital in Ethiopia. *The American Journal of Tropical Medicine and Hygiene*, *103*(3), 1198–1200. https://doi.org/10.4269/ajtmh.20-0464

Al-Quteimat, O. M., & Amer, A. M. (2020). The impact of the COVID-19 pandemic on cancer patients. *American Journal of Clinical Oncology*, *43*(6), 452–455. https://doi.org/10.1097/COC.0000000000000712

Ashkenazy, N., Goduni, L., & Smiddy, W. E. (2021). Short-term effects of COVID-19-related deferral on intravitreal injection visits. *Clinical Ophthamology*, *15*, 413–417. https://doi.org/10.2147/OPTH.S296345

Atherly, A., Van Den Broek-Altenburg, E., Hart, V., Gleason, K., & Carney, J. (2020). Consumer reported care deferrals due to the COVID-19 pandemic, and the role of potential telemedicine: Cross-sectional analysis. *JMIR Public Health and Surveillance*, *6*(3), e21607. https://doi.org/10.2196/21607

Beran, D., Perone, S. A., Perolini, M. C., François, C., Chopard, P., Haller, D. M., Bausch, F. J., Maisonneuve, H., Perone, N., & Gastaldi, G. (2020). Beyond the virus: Ensuring continuity of care for people with diabetes during COVID-19. *Primary Care Diabetes*, *15*, 16–17. https://doi.org/10.1016/j.pcd.2020.05.014

Blay, J. Y., Boucher, S., Le Vu, B., Cropet, C., Chabaud, S., Perol, D., Barranger, E., Campone, M., Conroy, T., Coutant, C., De Crevoisier, R., Debreuve-Theresette, A., Delord, J. P., Fumoleau, P., Gentil, J., Gomez, F., Guerin, O., Jaffré, A., Lartigau, E., … Beaupere, S. (2021). Delayed care for patients with newly diagnosed cancer due to COVID-19 and estimated impact on cancer mortality in France. *European Society for Medical Oncology*, *6*(3), 1–11. https://doi.org/10.1016/j.esmoop.2021.100134

Brewis, A., & Wutich, A. (2019). *Lazy, crazy, & disgusting: Stigma and the undoing of Global Health* (pp. 77–116). Johns Hopkins University Press.

Burt, J. F., Ouma, J., Lubyayi, L., Amone, A., Aol, L., Sekikubo, M., Nakimuli, A., Nakabembe, E., Mboizi, R., Musoke, P., Kyohere, M., Lugolobi, E. N., Khalil, A., & LeDoare, K. (2020). Indirect effects of COVID-19 on maternal, neonatal, child, sexual and reproductive health services in Kampala, Uganda. *BMJ*

Global Health, *6*(8), e006102. https://doi.org/10.1136/bmjgh-2021-006102

Callard, F., & Perego, E. (2021). How and why patients made Long Covid. *Social Science & Medicine*, *268*, 113426. https://doi.org/10.1016/j.socscimed.2020.113426

Callison, K., & Ward, J. (2021). Associations between individual demographic characteristics and involuntary health care delays as a result of COVID-19. *Health Affairs*, *40*(5), 837–843. https://doi.org/10.1377/hlthaff.2021.00101

Caston, N. E., Lawhon, V. M., Smith, K. L., Gallagher, K., Angove, R., Anderson, E., Balch, A., Azuero, A., Huang, C.-H. S., & Rocque, G. B. (2021). Examining the association among fear of COVID-19, psychological distress, and delays in cancer care. *Cancer Medicine*, *10*, 8854–8865. https://doi.org/10.1002/cam4.4391

Clodfelder, C., Cooper, S., Edwards, J., Kraemer, J., Ryznar, R., LaPorta, A., Meyers, M., Shelton, R., & Chesnick, S. (2022). Delayed care in myocardial infarction and ischemic stroke patients during the COVID-19 pandemic. *American Journal of Emergency Medicine*, *54*, 326.e1–326.e4. https://doi.org/10.1016/j.ajem.2021.10.023

de Joode, K., Dumoulin, D. W., Engelen, V., Bloemendal, H. J., Verheij, M., van Laarhoven, H. W. M., Dingemans, I. H., Dingemans, A. C., & van der Veldt, A. A. M. (2020). Impact of the coronavirus disease 2019 pandemic on cancer treatment: The patient's perspective. *European Journal of Cancer*, *136*, 132–139. https://doi.org/10.1016/j.ejca.2020.06.019

DeWitte, S., & Wissler, A. (2021). Demographic and evolutionary consequences of pandemic diseases. *Bioarchaeology International*, *6*(1–2), 108–132. https://doi.org/10.5744/bi.2020.0024

Dimka, J., van Doren, T. P., & Battles, H. T. (2022). Pandemics, past and present: The role of biological anthropology in interdisciplinary pandemic studies. *Yearbook of Biological Anthropology*, *178*(S74), 256–291. https://doi.org/10.1002/ajpa.24517

Doncarli, A., Araujo-Chaveron, L., Crenn-Hebert, C., Demiguel, V., Boudet-Berquier, J., Barry, Y., … Regnault, N. (2021). Impact of the SARS-CoV-2 pandemic and first lockdown on pregnancy monitoring in France. The COVIMATER cross-sectional study. *BMC Pregnancy and Childbirth*, *21*, 799. https://doi.org/10.1186/s12884-021-04256-9

DuBois, L. Z., & Shattuck-Heidorn, H. (2021). Challenging the binary: Gender/sex and the bio-logics of normalcy. *American Journal of Human Biology*, *33*(5), e23623. https://doi.org/10.1002/ajhb.23623

Duffy, E., Chilazi, M., Cainzos-Achirica, M., & Michos, E. D. (2021). Cardiovascular disease prevention during the COVID-19 pandemic: Lessons learned and future opportunities. *Methodist DeBakey Cardiovascular Journal*, *17*(4), 68–78.

Gibb, J. K., DuBois, L. Z., Williams, S., McKerracher, L., Juster, R. P., & Fields, J. (2020). Sexual and gender minority health vulnerabilities during the COVID-19 health crisis. *American Journal of Human Biology*, *32*(5), e23499. https://doi.org/10.1002/ajhb.23499

Gravlee, C. C. (2009). How race becomes biology: Embodiment of social inequality. *American Journal of Physical Anthropology*, *139*(1), 47–57. https://doi.org/10.1002/ajpa.20983

Gravlee, C. C. (2020). Systemic racism, chronic health inequities, and COVID-19: A syndemic in the making? *American Journal of Human Biology*, *32*(5), e23482. https://doi.org/10.1002/ajhb.23482

Hartnett, K. P., Kite-Powell, A., DeVies, J., Coletta, M. A., Boehmer, T. K., Adjemian, J., Gundlapalli, A. V., & National Syndromic Surveillance Program Community of Practice. (2020). Impact of the COVID-19 pandemic on emergency department visits – United States, January 1, 2019-may 30, 2020. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report*, *69*(23), 699–704.

Hoke, M. K., & McDade, T. (2015). Biosocial inheritance: A framework for the study of the intergenerational transmission of health disparities. *Annals of Anthropological Practice*, *38*(2), 187–213. https://doi.org/10.1111/napa.12052

Kelmelis, S., & DeWitte, S. N. (2021). Urban and rural survivorship in pre- and post-black death Denmark. *Journal of Archaeological Sciences: Reports*, *38*, 103089. https://doi.org/10.1016/j.jasrep.2021.103089

Khouchlaa, A., & Bouyahya, A. (2020). COVID-19 nephropathy: Probable mechanisms of kidney failure. *Journal of Nephropathology*, *9*(4), e35.

Lei, L., & Maust, D. T. (2022). Delayed care related to COVID-19 in a nationally representative sample of older Americans. *Journal of General Internal Medicine*, *37*(5), 1337–1340. https://doi.org/10.1007/s11606-022-07417-4

Lusambili, A. M., Martini, M., Abdirahman, F., Asante, A., Ochieng, S., Guni, J. N., Maina, R., & Luchters, S. (2020). "We have a lot of home deliveries" a qualitative study on the impact of COVID-19 on access to and utilization of reproductive maternal, newborn, and child health care among refugee women in urban Eastleigh, Kenya. *Journal of Migration & Health*, *1-2*, 100025. https://doi.org/10.1016/j.jmh.2020.100025

Murewanhema, G., Nyakanda, M. I., & Madziyire, M. (2020). Restoring and maintaining robust maternity services in the COVID-19 era: A public health dilemma in Zimbabwe. *The Pan African Medical Journal*, *37*(Suppl 1), 32. https://doi.org/10.11604/pamj.supp.2020.37.1.26798

Nishiga, M., Wang, D. W., Han, Y., Lewis, D. B., & Wu, J. C. (2020). COVID-19 and cardiovascular disease: From basic mechanisms to clinical perspectives. *Nature Reviews Cardiology*, *17*(9), 543–558. https://doi.org/10.1038/s41569-020-0413-9

Noymer, A., & Garenne, M. (2000). The 1918 influenza epidemic's effects on sex differentials in mortality in the United States. *Population & Development Review*, *26*(3), 565–581. https://doi.org/10.1111/j.1728-4457.20000.00565.x

Olson, D. R., Huynh, M., Fine, A., Baumgartner, J., Castro, A., Chan, H. T., Daskalakis, D., Devinney, K., Guerra, K., Harper, S., Kennedy, J., Konty, K., Li, W., McGibbon, E., Shaff, J., Thompson, C., Vora, N. M., & Van Wye, G. (2020). Preliminary estimate of excess mortality during the COVID-19 outbreak – New York City, march 11-may 2, 2020. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report*, *69*, 1–3.

Saglanmak, N., Andreasen, V., Simonsen, L., Mølbak, K., Miller, M. A., & Viboud, C. (2011). Gradual changes in the age distribution of excess deaths in the years following the 1918 influenza pandemic in Copenhagen: Using epidemiological evidence to detect antigenic drift. *Vaccine*, *29 S*, B42–B48. https://doi.org/10.1016/j.vaccine.2011.02.065

Singer, M., Bulled, N., Ostrach, B., & Ginzburg, S. L. (2021). Syndemics: A cross-disciplinary approach to complex epidemic events like COVID-19. *Annual Review of Anthropology*, *50*, 41–58. https://doi.org/10.1146/annurev-anthro-100919-121009

Singer, M., & Rylko-Bauer, B. (2020). The syndemics and structural violence of the COVID pandemic: Anthropological insights on a crisis. *Open Anthropological Research*, *1*, 7–32. https://doi.org/10.1515/opan-2020-0100

Thorne, J. G., Buitendyk, M., Wawuda, R., Lewis, B., Bernard, C., & Spitzer, R. F. (2020). The reproductive health fall-out of a global pandemic. *Sexual and Reproductive Health Matters*, *28*(1), 1763577. https://doi.org/10.1080/26410397.2020.1763577

van Doren, T. P. (2021). The 1918 influenza pandemic has lessons for COVID-19: An anthropology student perspective. *American Journal of Public Health*, *111*(1), 79–80. https://doi.org/10.2105/ajph.2020.306021

van Doren, T. P., & Kelmelis, K. (2022). Contextualizing pandemics: Respiratory survivorship before, during, and after the 1918 influenza pandemic in Newfoundland. *American Journal of Biological Anthropology*, in press. https://doi.org/10.1002/ajpa.24678

van Doren, T. P., & Sattenspiel, L. (2021). The 1918 influenza pandemic did not accelerate tuberculosis mortality decline in early-20th century Newfoundland: Investigating historical and social explanations. *American Journal of Physical Anthropology*, *176*(2), 179–191. https://doi.org/10.1002/ajpa.24332

Wissler, A. (2021). Engaging the osteological paradox: A study of frailty and survivorship in the 1918 influenza pandemic. Doctoral Dissertation: Arizona State University.

How to cite this article: van Doren, T. P., & Brown, R. A. (2023). Consequences of delayed care during the COVID-19 pandemic: Emerging research and new lines of inquiry for human biologists and anthropologists. *American Journal of Human Biology*, e23886. https://doi.org/10.1002/ajhb.23886