

Risk of Coronavirus Disease 2019 Transmission During Autopsy

To the Editor.—We wish to advance the discussion regarding potential transmission of coronavirus disease 2019 (COVID-19) infection from decedents to autopsy and/or morgue personnel.¹

In March 2020 one of us (A.K.W.) started an email distribution list among nearly 200 participants, most of whom are autopsy pathologists, for discussing issues relating to decedent management and autopsy amid the COVID-19 pandemic. A recent survey of the listserv participants asked how many autopsies had been performed on individuals known to be COVID-19 positive, what protective gear and conditions such offices used to conduct the autopsies, and whether autopsy personnel had experienced symptoms of, or tested positive for, COVID-19 infection.

Based on the survey results, during the course of the pandemic to date in the United States, at least 225 autopsies have been conducted on individuals presented as being positive for COVID-19 based on the clinical impression, laboratory tests, or both. These autopsies have been performed in 14 states (Alabama, California, Florida, Illinois, Iowa, Maryland, Massachusetts, New York, Rhode Island, Tennessee, Texas, Vermont, Washington, and Wisconsin). At least 102 of these postmortem examinations involved brain removal using various methods, including oscillating saws used in conjunction with vacuum attachments, running water over the incision, or plastic barriers around the head, as well as hand saws. Personal protective equipment used in each case included: a head cover; face shield; mask (N95), powered air-purifying respirators or controlled air-purifying respirators; gown; scrubs; boot covers; and nitrile gloves. The postmortem examinations were performed in rooms with and without negative pressure relative to surrounding areas.

Survey respondents reported that 1 person involved with performing these 225 autopsies has developed COVID-19 infection to date, which occurred early in the pandemic. Another 12 persons working in that same morgue have not developed symp-

toms of or had a diagnosis of COVID-19 infection. That office considers it likely that the 1 conversion occurred from community exposure rather than exposure during autopsy.

Respondents reported that from 1 to 6 persons are in a morgue during an autopsy at their institutions. Assuming an average of 3 person exposures per autopsy results in 675 total person-exposures. As of May 25, 2020, the Centers for Disease Control and Prevention reported that 1 637 456 persons have become infected with COVID-19 in the United States.² The US Census Bureau population clock estimates the US population to be 329 701 526.³ Calculations using these figures demonstrate that approximately 1 in 201 persons in the United States has become infected with COVID-19. Given that 1 person involved with COVID-19 autopsies has acquired COVID-19 infection out of approximately 675 exposures, it appears that performing autopsy while wearing recommended personal protective equipment presents exceedingly little risk of transmission of COVID-19 infection to autopsy personnel.

Gregory G. Davis, MD, MSPH^{1,2}; Alex K. Williamson, MD^{3,4}

¹ Forensic Division, Department of Pathology, University of Alabama at Birmingham; ² Jefferson County Coroner/Medical Examiner Office, Birmingham, Alabama; ³ Department of Pathology & Laboratory Medicine, Zucker School of Medicine at Hofstra/Northwell, Hempstead, New York; ⁴ Department of Pathology, LIJ Medical Center/Northwell, New Hyde Park, New York

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Accepted for publication June 9, 2020.

Published online June 10, 2020.

The authors have no relevant financial interest in the products or companies described in this article.

doi: 10.5858/arpa.2020-0345-LE

Editor's Note—Two letters^{1,2} commenting on the content of this letter were recently accepted and posted online.

1. Parkash V, Smith S. Risk assessment of autopsy acquired SARS-CoV-2 coronavirus (COVID-19) [published online ahead of print September 15, 2020]. *Arch Path Lab Med*. <https://doi.org/10.5858/arpa.2020-0500-LE>

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A Novel “Google Classroom”-Based Pathology Education Tool for Trainees During the COVID-19 Pandemic: Impactful Learning While Social Distancing

To the Editor.—The coronavirus disease 2019 (COVID-19) pandemic presents a global impediment in the delivery of education. This is especially relevant to pathology, where training happens one-on-one across the microscope. As the crisis hit, hospitals were forced to respond with measures to minimize close contact between staff. The situation was compounded by a reduction in the volume of cases. A survey of 279 healthcare facilities in the United States by the College of American Pathologists in April 2020 showed an average decrease of 64% in anatomic surgical pathology cases compared with the same period in 2019.¹ The pandemic has also served as an opportunity to expand the use of technology in education.² Herein, we report our experience using a platform for education to facilitate a worldwide collaboration between attending pathologists and trainees.

The Breast Cases Challenge (BCC) classroom uses the Google Classroom software, a free web service created by Google (Google, LLC, Mountain View, California) to help improve education via the internet and accessed via a web browser or through classroom app. The classroom is divided into attending pathologists (hereafter referred to as “teachers”) and trainees (hereafter referred to as “students”). Participation in the classroom is by teacher email invitation only, and each teacher is asked to