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Risk of COVID-19 Transmission During Autopsy

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To the Editor:

We wish to advance the discussion regarding potential transmission of COVID-19 infection from decedents to autopsy and/or morgue personnel.¹

In March 2020 one of us (AKW) started an email distribution list for discussing issues relating to decedent management and autopsy amid the COVID-19 pandemic among nearly 200 participants, most of whom are autopsy pathologists. 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 utilizing 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 (PAPR) or Controlled Air Purifying Respirators (CAPR), gown, scrubs, boot covers, and nitrile gloves. The postmortem examinations have been performed in rooms with and without negative pressure relative to surrounding areas.

Survey respondents reported that one 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 symptoms of or been diagnosed with COVID-19 infection. That office considers it likely that the one conversion occurred from community exposure rather than exposure during autopsy.

Respondents reported from 1-6 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 25 May 2020 the CDC reports that 1,637,456 persons have become infected with COVID-19 in the United States.² The US Census Bureau population clock estimates the United States 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 one 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.

References:

¹ Sriwijitalai W, Wiwanitkit V. COVID-19 in forensic medicine unit personnel: Observation from Thailand [published online ahead of print, 2020 Apr 11]. *J Forensic Leg Med*.

<https://doi.org/10.1016/j.jflm.2020.101967>

² Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19): Cases in the U.S. CDC website. <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>. Accessed 2020 May 25.

³ United States Census Bureau. U.S. and World Population Clock. U.S. Census Bureau website. <https://www.census.gov/popclock/>. Accessed 2020 May 25.