

# The Common Cup and SARS-CoV-2 Infection Risk

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## *Background:*

Over the last hundred years, concerns regarding the hygiene of the common cup have been raised. Despite these concerns, there is limited research regarding the infection risk associated with the practice of the common cup. As a result, a recent review<sup>1</sup> found only four experimental studies,<sup>2,3,4,5</sup> one clinical survey<sup>6</sup> and three reviews<sup>7,8,9</sup> on the topic. In the Anglican Church of Canada, focus on risks associated with the common cup emerged in relation to the AIDS epidemic in the 1980s: investigations at that time identified extremely low risk of transmitting the HIV virus through the use of the common cup.<sup>10</sup> In general, the majority of the research has focused on determining if virus or bacteria can be isolated from the common cup after use (i.e., after all eucharistic participants have been served) rather than on whether transmission of disease can occur from one participant to the next through sharing the common cup. To date, there is no documented evidence of disease transmission through the common cup.

The COVID-19 pandemic has resulted in the suspension of the use of the common cup from the eucharistic practice of the Anglican Church of Canada. The present paper seeks to determine whether continued suspension of this practice is warranted, or whether its reintroduction is a justifiable action in the midst of the pandemic.

## *SARS-CoV-2 Transmission:*

The dominant route of SARS-CoV-2 (i.e., the virus responsible for the COVID-19 pandemic) transmission is respiratory, i.e., inhalation of the virus through both aerosols

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<sup>1</sup> Spandeas N, Drosou E, Barsoum M, Bougea A. COVID-19 and Holy Communion. *Public Health* 2020;187:134-135.

<sup>2</sup> Godfrey WH. Communion cup and bacteria. *J Am Med Assoc* 1939;112:2555.

<sup>3</sup> Burrows W, Hemmens ES. Survival of bacteria on the silver communion cup. *J Infect Dis* 1943;73:180-90.

<sup>4</sup> Gregory KF, Carpenter JA, Bending GC. Infection hazards of the common communion cup. *Canc Publ Health* 1967;58:305-10.

<sup>5</sup> Hobbs B, Knowlden J, White A. Experiments on the communion cup. *J Hyg* 1967;65:37-48.

<sup>6</sup> Loving A, Wolf L. The effects of receiving Holy Communion on health. *J Environ Health* 1997;60(1):6-10.

<sup>7</sup> Gill ON. The hazards of infection from the shared communion cup. *J Infect* 1988;16:3e23.

<sup>8</sup> Dorf J. Risk of the common communion cup. *Linacre Q* November 1980;47(4). Article 7.

<sup>9</sup> Pellerin J, Edmond M. Infections associated with religious rituals. *Int J Infect Dis* 2013;17(11):e945-8.

<sup>10</sup> Gould DH. Eucharistic Practice and the Risk of Infection. *Report for the Doctrine and Worship Committee*. April 1987.

and droplets.<sup>11</sup> While both asymptomatic and symptomatic persons can transmit SARS-CoV-2, transmission is more likely from symptomatic individuals.<sup>12</sup> Proximity to an infectious person and ventilation of the space are extremely important factors that affect the probability of infection transmission. To date, there is no conclusive evidence of SARS-CoV-2 transmission through direct physical contact with an infectious person or fomites (i.e., objects that may be contaminated with infectious agents and serve in their transmission), although these transmission routes remain theoretically possible, and the emergence of new variants may increase or decrease this likelihood.<sup>13</sup>

Although the amount of SARS-CoV-2 that must be contracted to cause infection (i.e., infectious dose) is unknown, initial evidence suggests it's higher than for SARS-CoV-1 and lower than for Middle East Respiratory Syndrome (MERS), e.g., approximately a few hundred virus particles.<sup>14</sup> It is important to note that the focus of SARS-CoV-2 infectious dose research has focused on viral inhalation rather than on transmission via direct contact or gastrointestinal exposure. It is likely that a non-respiratory route of infection would require a higher infectious dose than a respiratory route.

#### *COVID risk and the Common Cup:*

Over the course of a regular communion service, a chalice becomes contaminated with the saliva of the participants.<sup>15</sup> While the cup may serve as a vehicle for transmitting infection, the risk of infection transmission is very small.<sup>16</sup> Given SARS-CoV-2's transmission route, the risk of transmission is far greater from breathing the air exhaled by an infectious person next to you at the communion rail than from sharing a common cup.

Despite the extremely low risk of SARS-CoV-2 transmission from a common cup, there are practices that should be maintained for the duration of the pandemic to ensure that this risk remains low: the exclusion of symptomatic persons from participation in church services, particularly from sharing in the common cup; the wiping of chalice between communicants; and physical distancing during participation in Holy Communion.

Superspreading events have played an important role in sustaining the COVID-19 pandemic. These usually occur when an infectious individual has close contacts with many susceptible individuals, for example at a festivals, bars, or social gatherings.<sup>17</sup>

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<sup>11</sup> Meyerowitz EA, Richterman A, Gandhi RT, Sax PE. Transmission of SARS-CoV-2: A Review of Viral, Host, and Environmental Factors. *Ann Intern Me.* 2021 Jan;174(1):69-79.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> National Collaborating Centre on Environmental Health *The Basics of SARS-CoV-2 Transmission* accessed July 8 2021. <https://nccch.ca/documents/evidence-review/basics-sars-cov-2-transmission>

<sup>15</sup> Spandreas N, Drosou E, Barsoum M, Bougea A. COVID-19 and Holy Communion. *Public Health* 2020;187:134-135.

<sup>16</sup> Ibid

<sup>17</sup> Althouse BM, Wenger EA, Miller JC, Scarpino SV, Allard A, Hébert-Dufresne L, Hu H. Superspreading events in the transmission dynamics of SARS-CoV-2: Opportunities for interventions and control. *PLoS Biol* 2020 Nov 12;18(11):e3000897.

While church services, especially those with congregational singing, have been demonstrated to be a potential superspreading event, the use of the common cup is not a possible vehicle for establishing a superspreading event.

#### *Risk Tolerance and Perception:*

Perhaps the greatest barrier to the successful reintroduction of the common cup is the perception of risk by the congregation. The focus on the disinfection of surfaces as a means of minimizing COVID spread in the early days of the pandemic changed the behaviour of many people. Even in the current environment, where it is clear that spread does not happen through contact with surfaces, people still perform practices that were reasonable in the midst of the unknown but are no longer warranted (e.g., sanitizing groceries). Bishops, parish clergy, and lay leaders will need clear and consistent communication strategies to address the perception of risk and address the limited tolerance that many congregation members may have around sharing the common cup. Keeping messaging to the science, while making space for questions and concerns, will be important moving forward. The practice of partaking in communion in one kind (i.e., only bread) will remain important for those who are unsure of participation in the common cup. Key messages should include that: the main route of transmission of COVID is respiratory rather than gastrointestinal; vaccinated persons are protected from infection regardless of the route of exposure. Finally, as new variants emerge, infectivity through direct contact routes will need to continue to be monitored, and changes in risk considered, as the practice of sharing a common cup continues.

#### *Conclusions:*

Modified practices for Holy Communion will need to be in place for the remainder of the pandemic, particularly in making participation safe for immunocompromised congregation members or those not yet eligible for the vaccine, especially those under 12 years old. Alternative means of receiving communion (i.e., in one kind) should continue to be made available. The practice of excluding persons with respiratory symptoms from participating in Holy Communion will help to ensure that the practice remains safe for others. The latter may be considered as an ongoing practice to be adopted in the long term, particularly during winter months when respiratory viruses are circulating, especially influenza. The possibility of transmitting SARS-CoV-2 to healthy persons through the contaminated chalice rim remains an unproven but theoretically possible risk. The risks associated with the reintroduction of the common cup must be understood in contrast to the greater and more probable transmission risk associated with sharing the same airspace with someone actively shedding SARS-CoV-2.

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