

Is it safe to sing in church at this time?

Author: Peter Klammer, May 24, 2020

The Headlines

- At this time, experts recommend NOT to sing together in indoor poorly ventilated spaces. Loud speech is also a potential risk.
- Churches should exercise caution in their re-opening plans and work to understand these risks and how to address them.
- Airborne transmission via tiny droplet aerosols is the main concern and most difficult to protect against. Current safety measures (distancing, masks, cleaning and hygiene, temperature screening) are not adequate to prevent infection via airborne aerosols.
- These recommendations are supported by years of research on virus transmission and current ongoing research on this new virus SARS-CoV-2.

I would like to share a concern I have about church re-opening plans that I believe may compromise member health and safety. In brief, I believe congregations should strongly consider suspending all indoor singing in their worship services for a time until we can ensure the health and safety of our members who attend an indoor worship service. This concern is based on a review of current research and the recommendations of experts in the field. I encourage all congregation leaders and Pastors to carefully understand and consider these recommendations as they make plans for re-opening. This recommendation does not come lightly and understandably is very difficult to accept for those of us who know the beauty and joy of singing and its central role in Christian worship.

As we sit on the cusp of re-opening across the country, I see re-opening guidelines that do not take into account one of the possible transmission modes of virus, that is, airborne transmission of the virus via aerosol.

Every respiratory event - breathing, speaking, singing, coughing, sneezing - expels droplets in a range of different sizes. Coughing and sneezing are well known viral transmission events which violently emit many thousands of droplets. Speech and singing ([ref](#)) also generate large quantities of droplets which increases with voice loudness. If a person is infected with Covid-19, these droplets carry virus that can infect others. The larger droplets quickly fall to the ground within 6 feet, hence the well-known 6 ft distancing guideline. Masks can also be an effective means of containing these larger droplets. However, there are also much smaller droplets, called aerosol, which are suspended in air for a long time (up to 3 hours or more), can travel a great distance, and are not well-contained by most masks. It is these aerosols that can carry the virus throughout the worship space if not properly ventilated. If an infected person (probably without any symptoms) is shedding virus, any location within the worship space may build up enough viral particles for an infectious dose. Unfortunately, no amount of social distancing is enough. A good way to understand this is to think about cigarette smoke which has similarly sized particles. If someone were smoking in the worship space, would you and everyone in the room be able to smell it? Over a period of time, I believe the answer is Yes.

Many diseases are transmitted via this airborne aerosol mechanism (measles, chicken pox, tuberculosis, influenza, SARS-CoV-1). There is now very active research on SARS-CoV-2, the virus that causes Covid-19, to fully understand its transmission modes. In particular, is it spread via these airborne aerosols? A recent paper published in Environment International [Airborne transmission of SARS-CoV-2: The world](#)

[should face the reality](#) makes a strong case that the airborne route is indeed in play. There are many cases reported in the literature of high rates of secondary infection in enclosed, inadequately ventilated spaces with people who are quite distanced from the viral source patient. In addition to the well-publicized case of the choir in Mt Vernon WA, examples include bus travel, a restaurant, a call center, and many churches (see reference list below). The common factors in all these cases are an enclosed space with inadequate ventilation over a period of time.

There is an abundance of relevant research both published and emerging on this topic. Rather than reproduce here all the references and current research on this topic of singing in church, I will refer you to this very readable survey article and recent update by Dr. Heather Nelson, voice scientist, church music director, and voice teacher.

- [Singing, the Church, and COVID-19: A Caution for Moving Forward in Our Current Pandemic](#)
- [Update #1: Singing, the Church, and COVID-19](#)
*"The gist: For now, it is not safe to sing together. And we should be very cautious when talking to one another.
There are still a lot of questions, and many things we don't know about SARS-CoV-2. However, there is a great deal of consensus among my colleagues around the country who are voice researchers, SLPs (speech language pathologist), and voice teachers. We are almost all in agreement that singing together now is not safe enough." Dr. Heather Nelson*

In another excellent review article - [The Risks - Know Them - Avoid Them](#), Professor Erin Bromage, Immunologist from Dartmouth University, says,

"Indoor spaces, with limited air exchange or recycled air and lots of people, are concerning from a transmission standpoint. We know that 60 people in a volleyball court-sized room (choir) results in massive infections. Same situation with the restaurant and the call center. Social distancing guidelines don't hold in indoor spaces where you spend a lot of time, as people on the opposite side of the room were infected. The principle is viral exposure over an extended period of time. In all these cases, people were exposed to the virus in the air for a prolonged period (hours). Even if they were 50 feet away (choir or call center), even a low dose of the virus in the air reaching them, over a sustained period, was enough to cause infection and in some cases, death."

A recent webinar on May 5, 2020 hosted by The National Association of Teachers of Singing (NATS) presented a panel of experts to tackle the question of whether corporate singing is safe at this time. The conclusion was "No, it is not safe".

- A summary of the key points [NATS Panel of Experts Lays Out Sobering Future for Singers: "No Vaccine, No Safe Public Singing"](#)
- Brief newspaper article covering the event <https://oklahoman.com/article/5662348/covid-19-could-mute-church-singing>
- The actual Webinar YouTube recording (a bit long - start at 11:28) [A Conversation: What Do Science and Data Say About the Near Term Future of Singing #officialnats](#)

Is there anything we can do to reduce the risk of airborne viral transmission?

A large cross-disciplinary group of 35 researchers from around the world have just released a preprint of an article to be published soon in Environment International, [How can airborne transmission of COVID-19 indoors be minimised?](#) . In this paper, they present recommendations to maximize protection for airborne transmission of virus-containing aerosols. Their recommendations include - improved ventilation with more outside air and frequent room air

changes, avoiding air recirculation, addition of air cleaning and disinfection, and minimizing number of occupants.

To summarize,

- Experts recommend refraining from singing in inadequately ventilated enclosed spaces until SARS-CoV-2 is under control, better understood or effective treatments and vaccines are available.
- Current risk mitigation methods are largely ineffective against airborne viral transmission.
- Churches should evaluate their ventilation systems and implement increased outside airflow to reduce the risk of airborne transmission in addition to distancing practices, masks, and cleaning protocols.

A final thought - If we can't sing in church, what can we do?

Make a joyful noise to the Lord, all the earth! Ps 100

- Sing outside!
- Try percussive music - drums, clapping hands, playing cymbals or bells. Get creative.
- Listen, meditate, or "sing" along in your head. Learn something new - just don't use your voice.

Author Bio

Peter Klammer is a lifelong Lutheran who grew up in the choir loft with his Mom while his Dad was preaching. He is an avid choral singer and served on the board of his local choral arts organization. Peter is an electrical engineer with a long career at HP Inc.

Additional references

Examples of infection spread in enclosed spaces.

- Bus travel: [Airborne transmission of COVID-19: epidemiologic evidence from two outbreak investigations](#)
- Call Center: [Coronavirus Disease Outbreak in Call Center, South Korea](#)
- Churches:
 - <https://www.redding.com/story/news/2020/04/07/pastor-redding-church-covid-19-outbreak-talks-handling-crisis/2965697001/>
 - <https://www.kansas.com/news/coronavirus/article241810656.html>
 - <https://www.kait8.com/2020/03/24/leburne-co-covid-outbreak-linked-church-outing/>
 - <https://www.startribune.com/2-residents-of-rural-martin-county-die-of-covid-19/569239942/?refresh=true>
 - <https://www.startribune.com/caution-critical-on-resuming-worship-services/570641622/>
- Choirs:
 - Skagit WA choir
 - <https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e6.htm>
 - <https://www.latimes.com/world-nation/story/2020-03-29/coronavirus-choir-outbreak>
 - <https://www.livescience.com/covid-19-superspreader-singing.html>
 - Amsterdam Choir
 - <https://www.trouw.nl/verdieping/die-ene-passion-die-wel-doorging-met-rampzalige-gevolgen~b4ced33e/>
 - Berlin Choir

<https://www.theguardian.com/world/2020/apr/29/germany-to-set-out-rules-for-religious-services-including-singing-ban>

- Restaurants / Nightclubs
 - https://wwwnc.cdc.gov/eid/article/26/7/20-0764_article
 - <https://www.vox.com/2020/5/11/21254451/south-korea-nightclub-outbreak-coronavirus-infections-reopening-dangers>

- Birthdays/Funerals
 - https://www.cdc.gov/mmwr/volumes/69/wr/mm6915e1.htm?s_cid=mm6915e1_w