This literature review was commissioned by the Incorporated Society of Musicians (ISM) and was completed on 11 July 2020.
The ISM commissioned a global literature review of the current research and information relating to COVID-19, transmission and risk management in both the performance and music education space.

The purpose of this document is not to give guidance but rather to bring together the wide amount of available information and share it with the rest of the music community. The study commenced on 19 June 2020 and was completed on 11 July 2020.

The literature review was written by Kathryn Williams and Dr Jodie Underhill.

The literature review explores COVID-19, transmission and risk management in both the performance and music education space. The first section focuses on COVID-19 issues in relation to performance and covers aerosol transmissions, instrument hygiene as well as issues relating to choirs and ensembles. The second section looks at the music education space and transmission with reference to children and young people and the mitigation measures for music education that countries have taken across the globe.
Music performance and COVID-19

Prepared by Kathryn Williams on behalf of the ISM between 19 June – 11 July 2020

The purpose of this section is to provide an overview of current scientific knowledge concerning COVID-19 transmission and to detail examples of guidance being followed by music ensembles who have resumed (albeit largely limited) rehearsal and performance activities.

It is not to provide guidance but rather to inform the music community of the information available. Further research into the safety of instrumental playing and singing is necessary for the safe resumption of music performance and for the livelihoods of many thousands of musicians and those working in the live music performance industry, for amateur music making (which is such an important part of the nation’s social and spiritual wellbeing), and for the concert-going public.

COVID-19 transmission

It is clear that COVID-19 is highly transmissible, and virologists and epidemiologists are exploring all avenues to understand why.\(^1\) There is broad agreement in the infectious disease community about possible modes of respiratory virus transmission between humans.\(^2\) Similar to what is known about influenza A and B, MERS-CoV, and SARS-CoV-1, virus-containing aerosols and droplets can lead to short-range airborne transmission.\(^3\) Widely recognised transmission pathways of COVID-19 are via larger respiratory droplets (produced through sneezing and coughing; most droplets fall to the ground rapidly) and direct contact with infected people or contaminated surfaces.\(^4\) A third route of infection, inhaling small airborne droplets, has strong scientific evidence, although the World Health Organisation (WHO) and other public health bodies have not yet formally accepted this.\(^5\) Professor Lidia Morawska of Queensland University of Technology has authored an open letter to the WHO, published on 6 July 2020, signed by 239 researchers from 32 countries, accusing the WHO of failing to issue appropriate warnings about the risk.\(^6\)

It is important for there to be greater clarity, as to whether or not the disease is transmitted by aerosol.\(^7\) Small respirable particles, invisible without specialist equipment, are produced through breathing and speaking, and can remain airborne for up to several hours in a poorly ventilated space.\(^8\) The evidence regarding aerosol transmission suggests that every individual emits potentially infectious aerosols all the time, not just when sneezing or coughing.\(^9\) However, infections are especially likely to occur in people who spend a long time in closed rooms.\(^10\) Aerosols are sufficiently large to carry viruses and they are in the correct size range to be inhaled deep into the respiratory tract of a susceptible individual.\(^11\) This is one of the reasons for the concern of asymptomatic carriers who unknowingly spread infection by aerosol transmission.\(^12\)

In regards to playing woodwind and brass instruments and singing, recent studies have shown that, despite the minimal amount of air movement in the vicinity of the instrument and mouth, aerosols are emitted.\(^13\) Room ventilation is an important way to help minimise the risk of transmission. Studies have shown that better ventilation of spaces substantially reduces the airborne time of respiratory droplets and aerosols.\(^14\) Further research on the aerosol production on different instruments and singers is currently being undertaken,\(^15\) and this information will help to answer questions about the safe resumption of work for musicians and those working in the music industry.
The current situation

On 9 July 2020 the government published guidance for people who work in performing arts which states that performances can take place outdoors from 11 July with a socially distant audience present. Prior to this, concert and theatres could reopen from 4 July for socially distant rehearsals and performances intended for recording purposes with no audience present.

The new guidelines include distancing measures of 3m between singers and wind and brass instrumentalists where the activity is face-to-face without other mitigations. In addition, singing and the playing of woodwind and brass instruments in groups or in front of an audience is currently limited to professionals only. For other groups of instrumentalists, non-professionals can meet to play outside in limited group sizes which follow the guidelines on meeting people from other households. For professionals, using fixed teams is suggested; this is acknowledged to be problematic for people who work with more than one group simultaneously. Mitigation measures for all instruments include avoiding playing face-to-face and suggests back-to-back or side-to-side (although most ensembles already sit side-to-side and back-to-back would obviously be problematic in most situations).

Individual companies with more than five employees must complete risk assessments, in line with workplaces in other sectors, which comply with COVID-secure reopening measures. For the performing arts, this appears to be similar to the risk assessment templates for other sectors (including ensuring social distancing measures, additional hand wash facilities, and where necessary placing plastic barriers between workers). Singing and playing wind and brass instruments in groups are ‘considered higher risk activities because of the potential for aerosol production and the absence presently of developed scientific analysis to assess this specific risk.’

There is strong scientific evidence that potentially infectious aerosol and droplet emissions increase with vocal loudness. Numerous COVID-19 outbreaks in meat processing plants have been linked to the loud environment which requires workers to shout in order to be heard. To create further confusion about the officially recognised COVID-19 transmission pathways outlined above, the entertainment sector guidance links aerosol transmission with raised voices in prohibiting live performances: At this time, venues should not permit live performances, including drama, comedy and music, to take place in front of a live audience. This is important to mitigate the risks of aerosol transmission – from either the performer(s) or their audience... All venues should ensure that steps are taken to avoid people needing to unduly raise their voices to each other. This includes, but is not limited to, refraining from playing music or broadcasts that may encourage shouting, including if played at a volume that makes normal conversation difficult. This is because of the potential for increased risk of transmission, particularly from aerosol transmission.

Singing and chanting in groups and playing instruments that are blown into for wedding ceremonies is expressly forbidden; again because ‘if music is played at a volume that makes conversation difficult or that may encourage shouting there is increased risk of transmission from aerosol and droplets.’

While accepting that the sector must follow the guidance from DCMS it is the case that loud talking can and does happen in pub settings and yet they have been allowed to reopen in England. This discrepancy is difficult to understand. There is currently no date set for indoor performances to resume. This means that musicians in the UK remain without a clear idea as to when, how, and to what extent their work can resume safely indoors.

Examples of current activities

Ensembles in the UK, including reduced size London Philharmonic Orchestra, Opera Holland Park, and Orchestra of the Royal Opera House have reconvened to rehearse and record for streaming, and the BBC Proms are planning a ‘flexible’ line-up with the hope to perform a week of recorded concerts with soloists and reduced size orchestras. Laura Marling performed live in June in a deserted Union Chapel with a handful of sound crew and some camera people. Brass Band England advises maintaining three metres distance between players (using screens to separate rows when this distance is not possible), increasing room ventilation, limiting ensemble size to six players or two households, emptying water keys into a cloth only handled and disposed of by the individual, and maintaining instrument hygiene. There is guidance provided for recording sessions available from the Musicians’ Union and examples of this being put into practice at Abbey Road Studios.
These guidelines include all personnel taking a health survey 24 hours before the session, staggered entry times, wearing face coverings outside of the rehearsal space, remaining in assigned seats for eating and drinking, and avoiding taking public transport to the venue.26

Orchestras and opera companies in other countries have resumed or are soon to resume live performance to audiences. Teatro Real Madrid has already started a run of 27 performances of La Traviata with mitigation measures in place for the cast such as staggered arrival times, building social distancing into the stage direction, the chorus wearing masks during the performance; for the orchestra, players sitting 1.5 metres apart with plastic screens in front of woodwinds and the conductor; for the audience masks are mandatory and intervals lengthened to avoid long queues and crowding.27 Smaller groups such as Ensemble Recherche in Germany are repeating performances twice per evening to audiences limited to half the venue capacity or fewer.28

Current guidance for musicians and ensembles

A policy brief written by medical professionals and board members of Berlin orchestras advise on physical distancing informed by instrument-specific air flow (strings, percussion, harp, keyboard 1.5 metres; wind players 2 metres; conductor 2 metres for rehearsal and 1.5 metres for performance).29 In normal orchestral seating, musicians do not sit facing each other, which already reduces some risk. Musicians should only speak to each other when necessary in a rehearsal situation and Plexiglas shields should be placed in front of the wind players to avoid potential aerosol distribution. Orchestra assistants should wear gloves when handling common-touch materials such as sheet music, chairs, and music stands.30 Studies have shown that COVID-19 particles can remain viable on surfaces such as plastic (72 hours), stainless steel (48 hours), and cardboard (24 hours).31

In the well-publicised cases of so-called superspreading events in choirs, scientists have simulated the rehearsal conditions and found that the high transmission rates were not caused by singing alone. In fact, poor room ventilation, close proximity, short breaks, and socialising all contributed to these events.32 As aerosol emission from speaking is likely to be greater than that from breathing or singing (and this increases with speech volume),33 face coverings should be worn during breaks and physical distancing of at least 1.5 metres should be constantly maintained.34 Although studies have shown that air is only set in motion in the immediate vicinity of the mouth when singing and that fewer droplets were expelled during singing than during talking,35, not enough is known yet about aerosol accumulation and distribution during singing.36 Risk mitigation advice for singing and choral activity from Freiburg includes observing distancing of 2 metres, taking ventilation breaks every 15 minutes, wearing face masks (since it can be assumed that there is no greater risk of being infected by singing than by speaking), and ensuring good hand hygiene.37

Now that the UK government advice has been published, there will soon be examples of British ensembles, orchestras, and venues developing their own bespoke policies. These will likely be in line with the above information, although this is currently confined to professional work only. There is no substitute for live music performance and as this situation and research continues to develop, it is essential that practitioners and venues share their strategies and experiences so that the wider community can move towards a best-practice consensus.

The way forward

Clarity is needed on the transmission pathways of COVID-19. The existing research suggest a range of behaviours that will minimise this risk. There are also numerous considerations beyond the remit of this document: for example, the government’s recent announcement of financial support to the arts is very welcome.38 However, the vast majority of musicians are self-employed and it is the extension of the SEISS scheme which is most urgently needed while musicians are not able to perform.
Music education and COVID-19

Prepared by Dr Jodie Underhill on behalf of the ISM between 19 June – 11 July 2020

On the 2nd July, the Department for Education published its guidance for the full reopening of schools in England for September.39

Prior to this, media reports suggested that these plans included a narrowing of the curriculum by suspending non-core subjects for two terms and pupils possibly dropping GCSEs in order to concentrate on English and Maths.40 These leaked plans caused concern to many music educators in light of the ongoing decline in music education, as documented in the 2019 ISM report, State of the Nation.41 Although the DfE guidance reinforces the desire for a broad and balanced curriculum, there are still restrictions placed on music teaching with no indication of when all practical music making activities can resume. At the time of writing, there were no such restrictions in school guidance documents from the devolved governments.

What does the guidance say?

Primary and Secondary Schools

In Key Stages 1–3, the majority of pupils are expected to be taught a full range of subjects over the 2020/21 academic year, prioritising the most important missed content within subjects. Whilst there is some flexibility to suspend some subjects for some pupils, this can only take place in exceptional circumstances and only where the best interests of the child can be demonstrated. In Key Stage 4, pupils may be allowed to drop subjects, again only in exceptional circumstances, and where this may result in them achieving significantly better results in English and maths. Key Stage 5 provision should be largely unaffected due to the small number of subjects studied. Specialist rooms are allowed to be used either with equipment being cleaned between each ‘bubble’ of pupils or rotated and left unused for up to 72 hours. Schools are encouraged to take on ITT trainees with some suggestions of general activities they could be involved in.

In addition to the general curriculum requirements, music and PE have additional guidelines. The guidance for music states, “…there may be an additional risk of infection in environments where you or others are singing, chanting, playing wind or brass instruments or shouting, even at a distance.”42 Risk reducing measures include social distancing, ensuring good ventilation, not sharing instruments, playing back to back or side by side, using outdoor spaces and limiting these activities to no more than 15 pupils. School choirs, ensembles involving brass and wind playing and assemblies should not take place.

Peripatetic instrumental teachers are permitted to move between schools but are encouraged to limit their contact with other staff and keep as much distance from them as possible. If they are able to teach at schools outside of normal hours they should do so. Extra-curricular activities are recognised as being an important way for pupils to re-connect with each other, but they should be kept within year groups or other ‘bubbles’ wherever possible and if not, take place in small consistent groups.

In contrast, PE departments are given the flexibility to decide how sports activities are to be taught with appropriate mitigating measures. Contact sports are not prohibited...
but should be avoided. Where outdoor sports cannot take place, indoor spaces can be used with appropriate distancing, cleaning and hygiene. The rationale for this is “the way in which people breathe during exercise”. Schools are directed to follow advice from external organisations such as Sport England and the Youth Sport Trust. There are no restrictions on the numbers of pupils or the types of activities which can take place. The guidance raises questions as to why such limitations are placed on music departments and not PE departments if the primary concern is changes in breathing and why external organisations are trusted to provide guidance for mitigating risks within PE lessons but not music lessons.

Further education, higher education and out-of-school provision

For Further Education settings, “activities such as singing and/or playing instruments should be avoided.” The guidance goes on to say that the government is continuing to work on scientific and medical advice regarding the safe management of these activities. No indication of when these activities can resume is given. The guidance for Higher Education allows live rehearsals and performances to take place without an audience. Providers are recommended to await further guidance on participating in singing and playing wind and brass instruments, although some risk reducing measures are suggested such as social distancing and reducing the number of singers and wind and brass players in one space to the smallest numbers possible. The guidance for out of school provision, such as holiday clubs and weekend tuition also advises against activities involving “singing, chanting, shouting or conversing loudly” even where distancing is observed and group singing activities should be avoided.

What are the potential implications of the guidance?

There are a number of implications for music education as a result of this current guidance, in addition to a lack of consistency across different settings as to which musical activities are allowed. Schools and FE providers may offer the same post-16 qualifications but have different restrictions placed on them because of their setting. Restrictions on singing and playing instruments may lead to a reduction in the type of practical music activities that can be taught, impact the length of lessons if equipment has to be cleaned between classes and affect the numbers of pupils able to attend extra-curricular provision. Some schools may choose not to use specialist music rooms at all if they have concerns about managing them. Access to these is particularly important for KS4 and KS5 pupils who need to prepare and complete coursework. ITT trainees’ experience in music departments will be much diminished in such cases. The current messaging to parents from the DfE is that, “...there may need to be changes to some subjects – such as PE and music – to ensure they can be delivered as safely as possible”. If parents do not trust that music lessons can be delivered safely in person, they may not want their children to learn an instrument. If schools only permit peripatetic teachers to work on site outside of school hours, this could potentially limit the amount of provision available and reduce the income of instrumental teachers as well as the opportunities available to pupils.

What is informing the government’s current thinking?

It is difficult to determine how the government has reached the conclusion that restrictions should be placed on certain musical activities but not on sporting ones. The Scientific Advisory Group for Emergencies (SAGE) has communicated research to the government in order to support their decision making since the start of the SARS-CoV-2 pandemic. The members of SAGE agreed to publish all minutes and supporting documents from their meetings in order to be fully transparent. From the publicly available material, at the time of writing, only four sets of documents make any reference to restricting singing activities. The first two papers by the Environmental Modelling Group (a SAGE sub-group) address the potential short range respiratory transmission risk in face-to-face contacts and suggest that not singing is one possible mitigation measure. Both papers explore similar themes and identify that aerosol and/or droplet generation “probably increases with loudness of sound...May also vary between languages and even words used.” Front to back and side to side interactions pose a partial risk and face-to-face interactions the highest risk. In the second paper the EMG states that “while there is some data on droplet generation rates from respiratory activities, there is very little data related to respiratory pathogens (only influenza and TB) and no data presently for SARS-CoV-2 or other human coronaviruses.”
The third paper from the EMG identifies anecdotal reports of super-spreading events, citing at least two outbreaks in choirs including the Skagit Chorale in the USA.50 The paper includes a table of mitigation measures ranked by the 14 members of the EMG in terms of efficacy, effectiveness and confidence in the quantity and quality of evidence. Some examples include social distancing, cleaning protocols and PPE. Reducing talking time/no singing was ranked mostly medium efficacy, medium/low effectiveness and low/medium confidence. Of the 39 potential mitigating measures identified, only three received rankings no higher than medium for effectiveness: singing, anti-microbial surfaces and changes to room air distribution patterns. An additional table expands on the rationale for each measure and includes available evidence and practical considerations. For singing, the evidence is stated as a, “small amount of mechanistic evidence from studies measuring droplet production, high rates of transmission reported in several choirs and religious groups.”51 However, they also note that there is no conclusive evidence of singing being responsible in these cases and that the impact of singing is “likely to be low for most environments.”52 The EMG identify singing, wind and brass instruments as an important research gap that should be addressed in order to open up musical activities which have been restricted due to ‘sufficient concern’. They also cite a significant lack of evidence in this area. These statements pose the question as to what is underpinning the government’s decisions when there seems to be acknowledged lack of data.

The final research paper is from the Centre for Mathematical Modelling of Infectious Diseases working group at the London School of Hygiene & Tropical Medicine. This paper from the 3rd June looks at 201 cases of super spreader events up until the 26th May, which are then classified into 22 setting types.53 The authors describe “several reports of outbreaks in choirs”, that “activity matters: not just time in shared space, but the activity being performed. E.g. many choirs, from different countries…” and suggest that the findings imply “that there are some settings which are ‘more risky’ either due to (a) environment (indoor / lack of ventilation / population density) or (b) activity occurring (singing/loud) or (c) duration of contacts...”54 There are two additional versions of this paper on the Wellcome Open Research website – one published on the 1st May55 and an updated version on the 5 June.56 These versions are very different to the one published by SAGE. Choir practice and singing are only included as descriptive activities within religious settings and funerals, respectively. The assertions made in the SAGE version are absent in both Wellcome versions and questions remain as to why they differ so greatly and why so much emphasis was placed on choral activity in one version but not the others.

What can be learned from organisations around the world?

Whilst the DfE has pledged to publish more detailed guidance shortly, there is much to be learned from other countries’ approach to music education in the current pandemic and the consideration that has been given to mitigating any potential risks, allowing children and young people to continue practical music making both in and out of the classroom. 32 separate pieces of guidance were considered from 10 different countries. Of these, less than 20% (6/32) advocate discontinuing either singing, choirs or woodwind and brass playing. 38% (12/32) acknowledge the potential increased risk in aerosol transmission but provide a range of detailed mitigating measures to reduce them for both students and teachers. The guidance across countries is generally consistent: increased social distancing between singers/players, using as large a room as possible for teaching and rehearsing, regular room ventilation, hand and respiratory hygiene, individual handling of instruments, equipment and sheet music, instrument hygiene and classroom cleaning protocols. With careful planning, creativity and support, it is clear that music education can and should continue. “We need music education now more than ever and we need to protect music programmes that are facing changes. Protecting music programmes protects students’ abilities to emotionally process what has been happening in the world around us.”57
The focus in this section is on the research concerning the transmission of COVID-19 through the lens of musical performance, particularly for woodwind and brass players, and singers.

It is important to note that there are scientific studies currently taking place and therefore updates will be required as new knowledge is disseminated.

It is clear that COVID-19 is highly transmissible, and virologists and epidemiologists are racing to understand why (Asadi et al, 2020, p. 635), although there is broad agreement in the infectious disease community about possible modes of respiratory virus transmission between humans (Tellier et al. 2019). Similar to what is known about influenza A and B, MERS-CoV, and SARS-CoV-1, virus-containing aerosols and droplets can lead to short-range airborne transmission (Pollitt et al, 2020). Current scientific evidence suggests that the transmission of COVID-19 is through inhalation or surface contact transmission:

- **Droplets:** Larger than 5 µm (microns) emitted through coughing and sneezing; droplets do not travel far before dropping to the ground, usually within 1 second (Somsen et al, 2020).

- **Aerosol:** Small respirable particles <5 µm produced through breathing and speaking; can remain airborne for up to several hours in a poorly ventilated space (Scheuch, 2020, p. 4).

- **Contact transmission:** Touching common surface materials and subsequent hand-to-mouth/nose/eye transfer (Pollitt et al). COVID-19 particles can persist in an infectious state for up to several days (van Doremalen et al. 2020).

According to Pollitt et al, because the short history of the COVID-19 pandemic has been marred by large amounts of misinformation, it becomes critically important to provide a definitive answer to the question as to whether or not the disease is transmitted by aerosol (p. 5). The evidence regarding aerosol transmission suggests that every individual emits potentially infectious aerosols all the time, not just when sneezing or coughing (Asadi et al 2020, p. 637). However, infections are especially likely to occur in people who spend a long time in closed rooms (Spahn et al 2020, p. 13).

The necessity for musicians to return to work as soon as safely possible is a given. Lack of professional activities and unemployment can result in increased mental disorders, respiratory distress syndromes and also chronic physical illnesses in the long term (Willich et al, 2020). Reports from Freiburg (Spahn et al) and Berlin (Willich et al) offer guidance for returning to orchestral playing including distancing the string players 1.5 metres; woodwind and brass two metre; shortening rehearsals; airing out the room regularly.

Recent studies showed that air is only set in motion in the immediate vicinity of the mouth when singing (Kaher & Hain 2020, p. 2), and that fewer droplets were expelled during singing than during talking (Loudon & Roberts 1968). However, not enough is known yet about aerosol accumulation and distribution during singing (Scheuch, p. 3). So called superspreading events in choirs must take into account other factors such as poor room ventilation, duration, volume of vocalisation, and general behaviours (chatting in the break, hugging, close proximity) (Miller et al 2020, p. 12).

Lockdown measures in the UK were introduced on 23 March 2020. At time of writing, socially distanced rehearsals, workshops, and performances for recording and livestream
purposes are allowed (UK Gov. 2020). Performances for broadcast have already been implemented at The Wigmore Hall and BBC Radio studios. A number of orchestras in other countries have resumed or plan to resume performances.

Aerosol transmission (pre-COVID-19)


This paper is often cited in the current literature coming out around Covid-19 concerning the future of safe singing. The study involved detecting aerosols emitted during speaking, breathing at various rates and most crucially, different volumes. It concluded that speaking is potentially more concerning than breathing in terms of virus transmission, and this concern rises with speech volume. It also highlights the instance of so-called vocal superspreaders, who are disproportionately responsible for the outbreaks of airborne infectious disease.


This scientific report measured airborne particles exiting the vuvuzela (the plastic blowing horns made popular in the 2010 FIFA World Cup in South Africa). Although not a standard instrument used in band or orchestra settings, certain similarities to brass instruments could be considered including the vibration of lips held against a mouthpiece and the forceful and sustained blowing required to play it. Results showed that mainly aerosols are emitted through the instrument. These findings suggest that the large number of aerosols emitted by the vuvuzela raises the possibility that, if used by persons with an infection of the respiratory tract, they could act a conduit for the spread of infectious particles, because larger droplets remain in the upper airways but smaller particles are more likely to transmit infections of the lower respiratory tract.


This paper details the considerations taken into account regarding airborne aerosol transmissions of chickenpox, measles, tuberculosis, smallpox, emerging coronaviruses SARS and MERS, influenza, and ebola. Similarities in most transmission pathways was the role of ventilation (e.g. poor ventilation seems to increase the spread).


NB: 229E refers to another strain of Coronavirus. Symptoms of respiratory disease often result in continuous recontamination of surfaces which are then touches, and infectious particles may be transferred to the face. Given that the average person touches their face up to 15 times per hour, there are ample opportunities for infections to spread. This study explored the viability of coronavirus on metal surface materials. While coronavirus persisted in an infectious state on common surface materials for several days, copper nickels were effective at inactivating it but required higher (90%) copper content to produce a degree of inactivation.

COVID-19 transmission


This editorial poses the hypothesis that face-to-face conversation with an asymptomatic infected individual, even if both take care not to touch, might be adequate to transmit COVID-19. With emphasis on the word “might”, the authors call upon aerosol scientists and virologists to provide the technology and data to either corroborate or reject this hypothesis.


This editorial posits that, given airborne transmission was the main transmission route of SARS-CoV-1 in the indoor cases studied, SARS-CoV-2 is highly likely to also spread by air. However, the World Health Organisation and national public health bodies do not formally accept airborne transmission despite the evidence and strong hypotheses. The authors plead
for international and national authorities to acknowledge that the virus spreads through air, and recommend that adequate control measures be implemented (including maximising natural ventilation in buildings, avoiding recirculating air, avoiding staying in another person’s direct air flow, and increasing ventilation rate).


Despite the World Health Organisation and national public health bodies not formally accepting the inhalation of small airborne droplets as a probable route of infection, the authors argue that the existing evidence is strong enough to warrant engineering controls targeting airborne transmission to limit infection risk indoors. The central principle for this is to replace contaminated air with clean air (most hospitals already have these systems in place; it is public building which need to be addressed most urgently). Where this is not possible, air recirculation must be avoided to prevent the dissemination of virus-laden particles throughout the indoor environment. Instead, portable air cleaners with regular filter replacements or simply allowing outdoor air in will help, as will avoiding over-crowding in rooms (e.g. customers sitting at every other table or seat).


This paper collects and reviews current and past studies to explore possible genetic determinants of COVID-19 and the contribution of aerosol exposure as a potentially important transmission route. In particular to singing, concentration of aerosol released by the combination of speaking and breathing for more than 4 minutes is equivalent to the amount of aerosol emitted for 30 seconds of singing or coughing. Infected individuals represent emission sources of aerosol generated by routine behaviours – such as breathing, speaking, singing, coughing, and sneezing – all of which might be capable of transmitting disease.


This study analysed droplets produced through speech and coughs through measuring droplet size distribution, travel distance and velocity, and the airborne time in relation to the level of air ventilation. Both large and small droplets were produced in a cough, and in speech only small droplets were detected. Large droplets were found to fall to the ground rapidly within 1 second, and small droplets could take up to 9 minutes to reach the ground. In the best ventilated room, the number of droplets halved within 30 seconds, whereas with no ventilation this took 5 minutes. In a poorly ventilated room, the number of droplets was halved in 1-4 minutes. This study concludes that better ventilation of spaces substantially reduces the airborne time of respiratory droplets.


The author has detailed a number of past studies into the exhalation of several different viruses, which have all concluded that breathing alone is enough to spread infection. These findings can be applied to SARS CoV-2 until more is known about this particular virus. Recommendations to contain exhaled viruses include being outdoors (where particles become diluted), ensuring indoor large air exchange and filters, and wearing masks.


Both viruses remained viable in aerosols for up to 3 hours; both remained viable the longest on plastic (72 hours) and stainless steel (48 hours). CoV-2 lasted longer on cardboard (24 hours) than CoV-1 (8 hours). Both viruses had the shortest viability on copper surfaces (4-8 hours).
Instrument hygiene

An issue already likely to problematise the health of musicians is the cleanliness of their instruments. Marshall & Levy (2011) found that it is extremely likely for woodwind and brass instrumentalists to re-contaminate themselves, and indeed contaminate others who might share their instrument, with a host of different bacteria and viruses, including the possibility of chronic immune conditions (p. 275). These articles are included to potentially help form guidance on the resumption of musical activities, and can contribute to the overall health of musicians.


This research provides prospective data on the survival of bacterial pathogens in wind instruments. Saliva and respiratory pathogens can be easily spread by sharing wind instruments, and players can re-contaminate themselves through repeated play of their own instruments. Reed instruments consistently carried higher microbial loads (species remained viable 1-13 days), and bacteria on plastic, wood and paper could persist for up to 3 days. Recommendations are included on properly sanitising instruments between people sharing them and regular cleaning of individual instruments.


This study took samples from 117 instruments in order to determine whether wind instruments are contaminated by either frank or opportunistic pathogenic microorganisms, which can cause significant disease in the person playing the instrument. The study confirmed that wind instruments are heavily contaminated with a wide variety of bacterial and fungal isolates in addition to a number of potentially harmful microbes, many of which are associated with minor to serious infectious or allergic diseases. The results of this study revealed that wind instruments and their cases become contaminated with use and that this contamination can last for extended periods of time. These findings warrant regular sterilisation of the entire instrument and its’ case.


A short, informative paper signposting to a large number of scientific resources. Warning against following guidance that is not scientifically supported, it makes clear that not enough is presently known about aerosol emission and its’ role in COVID-19 transmission; more studies are needed for instrumentalists specifically in order to understand the risks.

Choirs and Ensembles


These experimental studies took quantitative measurements of the air movement and droplet emission of singers and brass and wind players. The results showed that air movement was not detected at 0.5 metre for singing and brass; 1.0 metre for oboe, clarinet, bassoon; and slightly more for the flute. This data informed various recommendations for playing indoors (including ventilation, use of popshields, physical distancing), outdoors (reducing noise levels, physical distancing), and general behaviours for musicians (wearing masks to converse during breaks, brass players to empty liquid more frequently into a bowl with detergent).


This is a comprehensive document which explains transmission pathways of SARS-CoV-2 (droplets, aerosols, contact transmission) and offers recommendations for possible risk reduction in the field of music. It suggests entrance screening (a survey/questionnaire to regulate eligibility for attendance), temperature checks, ensuring venue size and ventilation
is sufficient, reducing rehearsal time, and allowing for regular airing out of the room every 15 minutes. The current recommendation for physical distancing for all forms of music making is two metres.


With input from orchestra boards from seven major orchestras in Berlin, this contains detailed stage plan recommendations for orchestras to reconvene, including instrument-specific air flow information, behavioural and hygiene responsibilities, and physical distancing (strings, percussion, harp, keyboard 1.5 metres; wind players two metre; conductor two metre for rehearsal and 1.5 metres for performance).


This is a risk assessment form for individuals to help them understand the specific risks they face, including level of vulnerability and risk of exposure to COVID-19, and enable these risks to be mitigated as far as possible.

Miller, S., et al. (15 June 2020). Transmission of SARS-CoV-2 by inhalation of respiratory aerosol in the Skagit Valley Chorale superspreading event. Submitted to Indoor Air. NB: Not peer-reviewed. doi.org/10.1101/2020.06.15.20132027

This case study of a Washington (USA) choir is now infamous for the tragic consequences of a likely superspreading event which led to 53-87% of the 61-member choir being infected, and sadly two deaths. This article goes into great detail of the factors which may have led to this occurrence, including poor ventilation of the space, high occupancy and close proximity, and the emission of large amounts of aerosol through loud singing. Through studying a simulation of these conditions, it concludes that improving air ventilation for indoor spaces and further studies of aerosol transmission is necessary.

Additional sources


Recent non-peer-reviewed instrument studies

- Bamberg Symphony Orchestra: Scientists measure aerosol emissions. br.de/nachrichten/bayern/bamberger-symphoniker-wissenschaftler-messen-aerosolausstoss, Ry6T6OU?fbclid=IwAR0q99L9nq3QBFZ6eIWDkS2vRNEnBj Kb96oYhDa-PeKx6ePGu9jQqy5RrQ
- Vienna Philharmonic: Movement of musicians’ breath while performing. wien.orf.at/stories/3049099
- Occupational hygienist Thomas Eiche measured expelled droplets and aerosols in brass and woodwind instruments. thomaseiche.ch/
- Odense Symphony Orchestra: measurement of airborne particles from brass and woodwind instruments from different distances. drive.google.com/file/d/1jXrCKG69YM0LbV7dCrUjQ84AYrLDeiVcy/view?usp=sharing
Some studies currently underway

- Colorado State University  smtd.colostate.edu/reducing-bioaerosol-emissions-and-exposures-in-the-performing-arts/

From the earliest days of the SARS-CoV-2 outbreak, the role that children and young people play in its' transmission, both to adults and other children, has been important to understanding and controlling the virus.

The earliest research indicated that children could potentially be the main spreaders, although much of this was supposition based on previous influenza outbreaks (Cao et al.). Later studies have concluded that children have played a lesser role in the transmission of SARS-CoV-2 than adults (Isaacs et al.; Heavey et al.) although there continues to be a lack of clarity in this area (Davies et al.).

School closures have previously been used to limit the spread of viruses by reducing the number and range of contacts between children, households and schools. Localised school closures began in China in January 2020, and as of the 26 June, 116 countries had countrywide school and university closures. More than one billion learners worldwide had been affected and at the height of these closures in the UK, more than 15 million young people’s learning was affected (UNESCO).

Following advice from SAGE and the Interdisciplinary Task and Finish Group on the Role of Children in Transmission, early years settings and primary schools in England began to reopen to children in Nursery/Pre-school, Reception, Year 1 and Year 6 on the 1 June, 2020. From the 15 June, 2020 pupils in Year 10 and Year 12 could return to school, but only a quarter of these age groups could attend at any one time.

As pupils have started to return to the classroom and schools plan for full reopening in September, there are implications for the curriculum, particularly in practical subjects. In addition to curriculum music across the lower three Key Stages, there are also implications for KS4 and KS5 courses, extra-curricular activities, instrumental tuition and Initial Teaching Training courses. It remains unclear at the present time how schools will accommodate the return of all pupils and staff and the teaching of all subjects, particularly where children are in different subject sets and pursuing different exam subjects. Media reports on the 29 June of leaked Department of Education plans for September suggested that some non-core subjects will be suspended for two terms and that some pupils may have to drop GCSEs in order to catch up and achieve better grades in English and Maths.

Other governments and organisations around the world have produced guidance for teaching music whilst reducing the transmission risks of SARS-CoV-2. However, they also acknowledge that the scientific advice on singing and playing woodwind and brass instruments is still developing, and so provide advice on mitigating measures in order for music to continue being taught. For instrumental teaching and ensembles these include health screening, social distancing, hand and respiratory hygiene, large/alternative rehearsal and teaching spaces, room ventilation, individual handling of instruments and equipment, the use of face coverings and perspex screens, instrument hygiene and classroom cleaning protocols. Guidance primarily from North America also addresses the potential budget implications of providing individual sheet music, music stands and instruments for pupils as well as an equipped music trolley which classroom teachers could move from room to room with if pupils are to be taught in discrete groups and restricted to using one classroom for all subjects (NFSH & NAfME; AMAM & MMEA).
97% of universities surveyed planned to return to face-to-face teaching in the autumn (Universities UK) and the government have since provided guidance for Higher Education settings. Some conservatoires such as the Royal College of Music, had already planned to return to some face to face teaching in July.

**COVID-19 transmission, children and young people**


This paper looks at the first known child cases of SARS-CoV-2 in China and their indication that children are a source of adult infection. Comparisons are made with influenza outbreaks where children are the main disseminators either in the household or community and suggest that wider community spread mixed with school transmission at the ‘explosion stage of the outbreak’ could occur with children as the main spreaders of SARS-CoV-2 due to their usually mild infection. The authors conclude that understanding the role of children in the transmission of the virus is important due to this possibility.


A study using a mathematical model to explore age disparities in observed SARS-CoV-2 cases in China, Italy, Japan, Singapore, Canada and South Korea. The authors estimate that the susceptibility to infection in people under the age of 20 is approximately half that of adults over the age of 20. They suggest that interventions aimed at children might have a relatively small impact on reducing the transmission of SARS-CoV-2, especially if the transmission risk of asymptomatic infection is low. However, they acknowledge that as children tend to make more social contacts than adults, they could contribute more to the transmission of the virus than adults.


Different hypotheses were explored addressing children’s and young people’s transmissibility of COVID-19. The authors warn that an increase in positive cases is more likely in the two months following the reopening of schools, even with the low transmission risk of children. They state that viral load is similar across age groups and across both symptomatic and asymptomatic cases but that the risk of transmission varies with the severity of symptoms. As milder symptoms have been observed in children, this could explain why younger age groups have a limited role as the source of transmission. They conclude that “additional epidemiological and virological investigations are urgently needed to better characterise the role of children in the transmission dynamics of the disease”, across age groups and in schools and the community.


This paper examines COVID-19 transmissions related to schools before their closure on 12 March 2020 in the Republic of Ireland. All SARS-CoV-2 notifications to Public Health Departments were screened to identify children and adults who had attended the school setting. Three children (one primary, two secondary, all above the age of ten) and three adults with links to schools were identified. One was a teacher and the other two adults delivered sessions in schools of up to two hours long. The available data suggested that these cases had not been infected in the school setting – four cases were linked to travel, one recreationally and one via a work environment. 1,155 contacts of the six cases were identified, with exposure occurring in the classroom, during sports and music lessons (woodwind instruments) and during a choir practice which involved a number of schools mixing in a church setting. There were no cases of onward transmission to other children or adults identified, despite the high risk transmission associated with the music lessons and choir practice. There was also no onward transmission from the three adult cases to any children. The only documented transmission that occurred was between adults in a working environment outside school.

Short paper examining the evidence to date using studies from China, New Zealand and Australia. It concludes that there is a possibility that asymptomatic and children with mild symptoms are important transmitters but rarely spread the virus and that, overall, children are unlikely to be major transmitters of SARS-CoV-2.


A summary of the recent evidence on COVID-19 transmission to and by children. The author explains that as yet, it cannot be concluded that children are less susceptible to SARS-CoV-2 than adults even though a small proportion (1–5%) of all worldwide cases are children. There is also a lack of understanding of the importance of children in the transmission of the virus. Finally, she concludes that future studies involving large numbers of children are needed, including collecting more detailed information during contact tracing.

Munro, A.P.S and Faust, S.N. (2020) Children are not COVID-19 super spreaders: time to go back to school (peer reviewed) *Archives of Disease in Childhood* 105 (7) dx.doi.org/10.1136/archdischild-2020-319474 (Peer reviewed; First published 5 May 2020)

This paper considers data from several different countries related to children and the transmission of SARS-CoV-2. The authors consider the important implications of asymptomatic but potentially infectious children on the wider community. They cite studies in Iceland and Italy where no children under the age of 10 were found to be positive for SARS-CoV-2. In the Italian study, the children were found to be living with adults who had tested positive. Data from Japan and China also showed a lower attack rate in children. A case study in the French Alps found that a child with COVID-19 failed to transmit it to any other person, despite contact with over a hundred children from different schools and a ski resort. A school-based study in Australia found that there was no evidence of children infecting teachers. One infected child was presumed to have contracted the virus following contact with two other students and in a separate case it was presumed that the student had been infected by a member of teaching staff. Data from the Netherlands suggests that SARS-CoV-2 is mainly spread between adults and from adult family members to children. The paper concludes that “at the current time, children do not appear to be super spreaders”.


The authors examined published and preprint studies and data from national public health websites in order to examine the role that children and young people play in the transmission of SARS-CoV-2 as well as their susceptibility. They looked specifically at contact-tracing and population-screening studies. Their review of household clusters found that 10% were due to a child index case and in a population-based school study that there was minimal transmission by child or teacher index cases. There were conflicting results in large studies, with lower prevalence in children and young people in Iceland, the Netherlands and Spain, but no difference between the prevalence in adults and children in Stockholm, England and municipalities in Switzerland and Germany. The authors present preliminary evidence that children and young people have a lower susceptibility to SARS-CoV-2, with 56% lower odds of being an infected contact. However, there is weak evidence that children and young people play a lesser role in the transmission of the virus at a population level. The study provided no information on the infectivity of children. They conclude that the “role of children and young people in transmission of SARS-CoV-2 is dependent on susceptibility, symptoms, viral load, social contact patterns and behaviour.” Finally, they caution that there are no published studies addressing the mechanism of transmission in children and that the data on viral load in children is extremely limited.
Walger, P., Heininger, U., Knuf, M., Exner, M., Popp, W., Fischbach, T., Trapp, S., Hübner, J., Herr, C., Simon, A., German Society for Hospital Hygiene (DGKH), German Society for Pediatric Infectious Diseases (DGPI), German Academy for Pediatric and Adolescent Medicine (DAKJ), Society of Hygiene, Environmental and Public Health Sciences (GHUP), and Professional Association of Pediatricians in Germany (bvkj e.V.) (2020) Kinder und Jugendliche in der CoVid-19-Pandemie: Schulen und Kitas sollen wieder uneingeschränkt geöffnet werden. Der Schutz von Lehrern, Erziehern, Betreuern und Eltern und die allgemeinen Hygieneregeln stehen dem nicht entgegen (Children and adolescents in the CoVid-19 pandemic: Schools and daycare centers are to be opened again without restrictions. The protection of teachers, educators, carers and parents and the general hygiene rules do not conflict with this) GMS Hygiene Infection Control 15 (Doc 11) doi.org/10.3205/dgkh000346 (Peer reviewed: first published 28 May 2020)

Consideration is given to the existing published research to date regarding the transmission of SARS-CoV-2 “showing that children play a less significant role in the spread” of the virus than adults. Reference is made to early research in China showing that children and young people play “a subordinate role” in the transmission of the virus, both to other children but also to adults. The authors stress the importance of protecting teachers, educators and caregivers through social distancing, medical masks, hand hygiene and, when necessary, testing. They also suggest that there is a possibility that the risk of transmission from young people over the age of 15 does not significantly differ from that of adults but conclude that there is currently insufficient evidence to explain the significantly lower rate of contagion in younger children.


This paper examines data from China, Singapore, South Korea, Japan and Iran relating to children in order to try and understand the role that children play in the transmission of SARS-CoV-2. Out of 31 household transmission clusters, only 10% were identified as having a child index case, compared with H5N1 where it was 54%. This suggests that children have not played a substantive role in the transmission of SARS-CoV-2 within households. Early household infection data from Wuhan also suggests that children are more likely to be contact cases, rather than index cases.

Mitigating measures for music education by Country

Australia

Bunbury Cathedral Grammar School, Western Australia bcgs.wa.edu.au/covid-19-update/ (Date unclear)

Australian school website which specifically mentions procedures for music students. The information acknowledges the additional risks for the spread of COVID-19 through some music activities and outlines protocols in place to minimise transmission risks. These include social distancing, no sharing of instruments, music stands or sheet music, cleaning of instruments, emptying of brass spit valves, and the avoidance of fricatives, affricatives and sibilant sounds in singing warm-ups.

Canada


The document includes safety recommendations and alternative curriculum delivery models. The authors stress the importance of continuing music education during COVID-19 stating that, “music is a lifeline for thousands of students across our province”. They raise the question of safety and quote existing and future research in support of their recommendations. These recommendations include general classroom cleaning, rehearsal spaces, social distancing, instrument hygiene and disinfection, spit key protocols, alternative models of curriculum delivery and suggestions for performance, for example, live streaming without an audience physically present. The specific guidance for choirs is that singers are front facing only, have their sheet music on stands rather than handling it, and maintain a distance of two metres from other singers. Conductors should be 6 metres from the
choir or use a face shield and/or mask. Pianos should only be used if required in the music and percussionists could be assigned their own specific instruments. Finally, percussion, pianos and other instruments which remain at school should be sanitised at the end of each day.


This document covers guidance for a variety of businesses, education settings and recreational activities. Schools are currently open for staff and specific educational programmes but classroom learning is suspended. Sports, band and other extra-curricular activities are permitted but choirs and musical theatre activities are prohibited, “due to a higher risk of transmission through singing as compared to speaking.” The same is true for summer camps.


These organisations represent guitar, band, choral and elementary music educators in Manitoba. They stress the importance of continuing to provide music education as schools begin to reopen. Recommendations are made that music lessons continue in dedicated music rooms, unless shared spaces are still discouraged by public authorities, in which case the music teacher should move between classrooms, giving them extra time in the timetable to accommodate this. There is further guidance relating to equipment, cleaning, hand hygiene and the use of gloves when helping students make adjustments to their instruments such as tuning. Alternative curriculum and teaching methods which require minimal equipment such as body percussion are suggested. Finally, budget implications are considered such as additional instruments, specialised cleaning supplies which do not damage instruments, and a mobile music station for classroom music teachers travelling between classrooms.

**A Framework for The Return to Music Classes in 2020/2021** Ontario Music Educators’ Association (OMEA) [omea.on.ca/covid19/](http://omea.on.ca/covid19/) (7 June 2020)

The OMEA COVID-19 Response Committee team was formed in May 2020, to address the impact of COVID-19 on school music programs in Ontario. The framework is based on research and medical advice. Guidance includes setting up a classroom with 6ft by 6ft squares to enable social distancing of two metres per student, specifically so that droplets from speaking have enough space to fall to the floor. Chairs and music stands should be pre-set to avoid unnecessary movement and not shared. Detailed methods of disinfecting instruments are provided as well as a list of cleaning supplies needed for the music classroom. Recommendations are also made regarding the wiping down of chairs, stands, equipment and other surfaces. There are suggestions for alternative teaching and instruction methods and a detailed list of resources for this, covering both primary and secondary school, with internet links.


A support and guidance document for general school reopening. The document acknowledges that a return to school will likely increase cases of COVID-19 and places importance on mitigation measures such as testing and contact tracing. There are specific references to a higher level risk involved in choir practices/performances and band practices/performances including woodwind instruments. The suggestions are that instruments should not be shared, that they should be disinfected if sharing cannot be avoided, and that special consideration should be given to room ventilation and the distance between participants.

**Denmark**


The document includes specific guidance for social distancing of two metres for activities “where drops are thrown further than normal speech”, such as singing, shouting, lecturing and acting. It also suggests that there should be a two metre distance between the teacher and the front row of the class but that a one metre distance between students is adequate.
Germany

Prof. Dr. med. Dirk Mürbe, Dr. med. Peter Bischoff, Dr.-Ing. Mario Fleischer, Prof. Dr. med. Petra Gastmeier (2020) Beurteilung der Ansteckungsgefahr mit SARS-CoV-2-Viren beim Singen (Assessment of the risk of infection with SARS-CoV-2 viruses in singing) Charité – University Medicine Berlin audiologie-phoniatrie.charite.de/metas/meldung/artikel/detail/uebertragung_von_sars_cov_2_viren_beim_singen/ (6 May 2020)

Consideration is given to the risk of aerosol and droplet transmission of SARS-CoV-2 in speaking and singing whilst acknowledging the lack of scientific study in this area. General measures to reduce the risk of infection when singing are then outlined, including hand and respiratory hygiene, social distancing, room size and ventilation, face coverings and splash and spit protection. In addition to these measures, specific guidance for individual lessons also include only allowing two people in the room, choosing the largest possible teaching space, maintaining a distance of at least 3 metres and cleaning high touch surfaces between students.


Recommendations are based on the general recommendations from the Robert Koch Institute and transferred to musical settings. The lack of data related to singing and playing of wind instruments and aerosol transmission is acknowledged. In addition to general mitigation measures such as hand and respiratory hygiene, social distancing and room size and ventilation, specific recommendations are made for instrumental teaching. These include the use of face coverings, limitations on the number of people in a room, minimum social distancing of 1.5 metres, avoiding face-to-face instruction by sitting at a 90° angle, the use of plexiglass screens between student and teacher and cleaning of the room between learners.


Part 4 of this ordinance specifically mentions music education. Whilst music schools are permitted to open, they are only allowed to provide individual lessons and group lessons of up to five students. Singing, woodwind and brass lessons are only allowed as individual lessons. The ordinance states that,” Special precautions must be taken for this and for teaching in the field of the performing arts.” But does not specify what these are.

The Netherlands

Branch-specific additional guidelines for the Protocol Sector for Cultural Education and Participation Cultuurconnectie cultuurconnectie.nl/actueel/nieuws/covid-19-pandemie/branchespecifiek/protocol (Date unclear – the information may be updated due to a government announcement on June 24 regarding relaxation of general measures commencing on 1 July 2020)

Recommendations created by a working group of arts and education organisations in the Netherlands. Teachers are asked to contact the students and their parents/carers the day before the scheduled lesson to check on their current health situation. Where there is any concern, the lesson should take place online. Further guidance includes hand hygiene, social distancing of two metres for singing and wind instruments and 1.5 metres for other instruments, screens for singing and wind lessons, the use of gloves for handling reeds and mouthpieces of a student’s instrument, spit valve emptying protocols and cleaning routines, including furniture. Children up to 6 years old may have one parent or carer present in the lesson. For ensembles, choirs and wind players, groups are advised not to rehearse together until there is further understanding of the risks of transmission. For musical theatre lessons and rehearsals, the guidance is currently not to sing or shout, and to rehearse either outdoors or in a large, well-ventilated room.
**Norway**

**Infection Protection Guidance for Culture Schools**
Norwegian Cultural Schools Council [kulturskoleradet.no/smittevernveileder-kulturskole](https://kulturskoleradet.no/smittevernveileder-kulturskole) (12 May 2020)

Detailed guidance for performing arts schools covering social distancing, room capacity and setup, ventilation and handling of instruments. There are also recommendations for safe teacher intervention such as string tuning, as well as safe emptying of brass spit valves.

**Infection control guidelines for childcare centres, schools and after school clubs**

Guidance for primary and high schools where music is specifically mentioned. Norway is operating a traffic light system of action levels. The guidance for music is the same for both red and yellow levels. The current level is yellow. Wind instruments are not allowed to be shared between multiple students and handheld instruments and keyboards must be cleaned after use. When the action level moves to green, teaching can take place as normal.

**Clarifications for the band and drill**

These recommendations for safe rehearsals include not replacing reeds during rehearsals, guidance for emptying brass spit valves and playing standing rather than marching. Social distancing recommendations are a minimum of one metre, with a preference for two metres in all directions, including when marching. There is also guidance for staggered arrivals to rehearsals, vacating rooms between different groups, and cleaning chairs before and after use.

**Veileder: Smittevern for musikkøvelser (Infection protection for music activities such as bands, orchestras, choirs, bands and other music groups)**
The Norwegian Music Council [musikk.no/nmr/om-oss/medlemsorganisasjoner/ressurser-for-medlemmer/veileder-smittevern-for-musikkovelser](https://musikk.no/nmr/om-oss/medlemsorganisasjoner/ressurser-for-medlemmer/veileder-smittevern-for-musikkovelser) (22 April 2020; updated 15 June 2020)

Detailed guidance for rehearsals and performances including room capacity, room setup and recommended minimum room sizes. There are in-depth considerations given to sharing of instruments, associated equipment such as bows and resins and also sound systems, mixing desks and microphones. For marching bands, specific ‘buffer zones’ of 3m² per player are recommended with a 1.5 metres distance between side by side players and a 2 metres distance between each row.

**Republic of Ireland**

**Advice to Government in relation to realigning the Public Health Framework Approach to reducing restrictive measures into two final Phases**

The Irish public health framework for easing restrictions, commencing on 28 June (Phase 3) and 20 July (Phase 4). The document specifically addresses group singing, choirs and playing woodwind and brass instruments in a group, stating that there is potentially an increased risk of infection due to increased droplet or aerosol transmission. There is guidance on strict social distancing, limiting indoor musical activity, room ventilation and instrument cleaning. It is also suggested that singers and woodwind and brass musicians should consider protective equipment such as instrument covers, screens and face coverings.

**Scotland**

**Additional Guidance on Managing Risks of Covid 19 for Instrumental Music Teachers**
The Educational Institute of Scotland (Education Union) [eis.org.uk/Coronavirus/IMTAdditionalGuidance](https://eis.org.uk/Coronavirus/IMTAdditionalGuidance) (Date unclear – May/June 2020)

Supplementary, specific guidance for peripatetic instrumental music teachers in addition to general advice to members. It acknowledges the increased potential droplet or air-borne transmission during voice and instrumental lessons and provides guidance on the allocation and cleaning of teaching rooms, social distancing, sharing and cleaning of instruments, choral and ensemble work, health and travel.
Singapore

Sustaining the Arts During Covid 19: Phase 2 of re-opening for arts and culture stakeholders National Arts Singapore
nac.gov.sg/whattewedo/support/sustaining-the-arts-during-covid-19/Arts-and-Culture-Sector-Advisories.html
(15 June 2020 – for implication from 18 June 2020, 23:59hrs)

Guidance for ‘training classes’ specifically states that they may resume from 19 June, “except for singing, voice training, playing of wind or brass instruments or other instruments that require intentional expulsion of air due to the higher health risks involved.”. This statement is reiterated later in the document but with the inclusion of ‘voice projection’ and outlines the potentially high risk of droplet transmission. These activities are prohibited until further notice.

United States

Considerations for Schools US Centre for Disease Control
cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-childcare.html
(Updated 21 April 2020)

Guidance for childcare settings which suggests keeping children in separate groups for activities such as art, music and exercise.


Supplementary guidance to state and local laws for schools, including wearing of face masks for staff and students, classroom layout, social distancing, cleaning regimes and ventilation.

The CBDNA Covid-19 Response Committee Report College Band Directors National Association cbdna.org/covid19/
(21 May 2020)

This report focuses on large ensemble instruction in college and university band programs only. Suggestions are made regarding outdoor rehearsals and/or performances, no shared sheet music or music stands, not sharing chairs by standing to play, and not sharing instruments. Looking at smaller chamber music repertoire is also suggested. Further guidance is given related to teaching and learning and includes consideration of a potential lack of access to instruments, specialist equipment and practice areas. The report also addresses the potential need to modify practices such as emptying spit valves and removal of slides but does not specify any methods for doing so.

Recommendations for the Practical, Fair, and Safe Reopening of Public Schools K-12 in the State of Texas
Cook Children’s Health Care System cookchildrens.org/coronavirus/action/Pages/Safe-Reopening.aspx#_edn5
(Updated 9 June 2020)

Recommendations from a not-for-profit organisation of eight medical companies. Addresses musical activities in communities where the transmission of Covid-19 is sustained. The advice includes suspending choir rehearsals and indoor woodwind and brass rehearsals until more information about transmission is available, using relevant social distancing for outdoor woodwind and brass rehearsals and wearing face coverings when not performing or when unable to maintain social distancing.

Guidance for a return to high school marching band
National Federation of State High School Associations (NFHS) Music Committee Sports Medicine Advisory Committee (SMAC) nfhs.org/articles/nfhs-releases-guidelines-for-return-to-high-school-marching-band-activities/ (9 June 2020)

This guidance covers all three phases outlined by the White House in their “Opening Up America” document whilst acknowledging that some state and regional advice may vary. It includes detailed advice on pre-rehearsal health screening, limiting group sizes, social distancing, rehearsing outdoors, sharing of instruments and equipment, cleaning schedules and face coverings. There is further advice on social distancing for competitions and limiting of essential and non-essential attendees.

Covid-19 Response Committee Report American Choral Directors Association acda.org/resources-for-choral-professionals-during-a-pandemic/ (15 June 2020)

This document presents a series of instructional practices for school, college and community choirs whilst acknowledging the need for more empirical research. The suggestions consider face-to-face, blended and distance learning scenarios. Face-to-face guidance for younger school students includes smaller groupings, non-singing musical activities, the use of outdoor space for rehearsals, no sharing of sheet music and social distancing.
The guidance for high school students includes the use of larger rooms for rehearsals, social distancing, the use of acoustic shields between rows and/or between individual singers, the use of humming rather than open mouth singing, no sharing or storing of equipment and alternative performance opportunities such as live-streaming. For college students, the guidance suggests dividing large choirs into smaller ensembles of 4 to 16 singers across the voice part and alternative campus spaces for rehearsals including outdoor spaces. Further consideration is also given to private practice spaces.

Georgia Music Educators Association
A series of guides on teaching classroom music, guitar, choirs and instrumental ensembles. Most refer to following the most up to date scientific research, due in July 2020 (most likely the University of Colorado at Boulder study led by Dr S Miller).

gmea.org/blog/2020/6/15/gmea-return-to-marching-guidelines-proposal (15 June 2020)

gmea.org/blog/2020/6/17/guidance-for-beginning-ensembles-during-covid-19

gmea.org/blog/2020/6/17/guidance-for-band-during-covid-19

gmea.org/blog/2020/6/17/guidance-for-elementary-music-during-covid-19

gmea.org/blog/2020/6/17/guidance-for-chorus-during-covid-19

gmea.org/blog/2020/6/17/guidance-for-orchestra-during-covid-19

(All 17 June 2020)


This document provides practical guidance for PreK-12 schools for meaningful music instruction during the Covid-19 pandemic. It also clearly states that it is not meant to replace CDC, state or local public health guidance and that there is no expectation for schools to follow every recommendation. Reference is made to the University of Colorado study regarding aerosol distribution and suggests that no indoor ensemble singing takes place until the results of the study are known and that music classrooms should practice social distancing in the forms of smaller groups and chamber music. Detailed guidance is then given for face-to-face instrumental teaching, classroom music teachers (particularly the challenges for elementary teachers) and the budget implications as a result of social distancing, for example additional sheet music and instruments.


Document by local music educators described as ‘a collection of considerations related to teaching instrumental music education whilst also preventing the spread of COVID-19’. It gives detailed suggestions regarding cleaning (classrooms and instruments), classroom layout, pre-rehearsal screening, general hygiene measures and maintaining healthy environments, including ventilation.

Additional sources


Huffington Post, 29 June, 2020 Exclusive: What Schools Will Be Told To Do In September So All Pupils Can Return huffingtonpost.co.uk/entry/school-reopening-whole-year-bubbles-full-guidance-covid_uk_5ef9dd4ac5b6ca97091288e4

Universities UK Most universities will teach in-person this autumn (2020) universitiesuk.ac.uk/news/Pages/Most-universities-will-teach-in-person-this-autumn.aspx

Royal College of Music Coronavirus (Covid-19): advice and updates (2020) rcm.ac.uk/coronavirus/


5. Ibid.


7. Pollitt, et al.


25. Attending Recording Sessions During the Outbreak. *Musicians’ Union.* Retrieved from musiciansunion.org.uk/Home/Advice/covid-19/Attending-Recording-Sessions-During-the-Outbreak


Kahler, C., Hain, R.


Knight, G, Leclerc, Q, Kucharski, A on behalf of CMMID working group (3 June 2020) Analysis of SARS-CoV-2 transmission clusters and superspreading events. Submitted to *Nature Medicine*. doi.org/10.1038/s41591-020-0874-8


Knight, G, Leclerc, Q, Kucharski, A on behalf of CMMID working group (3 June 2020) Analysis of SARS-CoV-2 transmission clusters and superspreading events. Submitted to *Nature Medicine*. doi.org/10.1038/s41591-020-0874-8
The Incorporated Society of Musicians (ISM) is the UK’s professional body for musicians and a nationally recognised subject association for music. Set up in 1882, the ISM now has over 10,000 members across all parts of the UK. The ISM focuses on providing specialist services including legal advice and representation, comprehensive insurance and professional development to its members who come from all areas of the music sector and from a wide variety of genres and musical backgrounds. We support all parts of the profession as well as music education through a range of advocacy initiatives including policy formulation and research. The ISM is a financially independent not-for-profit organisation with no political affiliation.

About the authors

The literature review was written by Kathryn Williams and Dr Jodie Underhill.

Kathryn Williams is a current PhD student in Performance at the University of Huddersfield’s Centre for Research in New Music. She is a professional freelance flautist, having performed with numerous orchestras around the UK including the Royal Philharmonic Orchestra, and is a member of new music ensemble The House of Bedlam. Her solo project, Coming Up for Air, commissions flute pieces limited to a single breath, highlighting her personal journey of overcoming medical respiratory conditions. Kathryn is the principal study flute teacher at the University of Bangor in Wales and is involved in pre-tertiary teaching and outreach projects including the BBC Philharmonic, National Youth Orchestra of Great Britain, and Aldeburgh Young Musicians.

Dr Jodie Underhill holds a PhD in psychology from Keele University where her research focussed on musical culture and participation within different school settings and is a qualified music teacher with over 18 years’ experience. She has been a Head of Music, Head of Drama and Head of Performing Arts and has taught across all Key Stages in state and independent schools and weekend performing arts schools. She has run her own private teaching business in addition to having been an examiner for both GCSE music and A Level drama. She is the current Chair of Brizen Young People’s Centre in Cheltenham.
The Incorporated Society of Musicians is the UK’s professional body for musicians and a nationally-recognised subject association for music. We were set up in 1882 to promote the art of music and to protect the interests and honour of all musicians. Today we support over 10,000 members with unrivalled services and expert advice, from study up until retirement and beyond. We are a wholly independent, non-profit-making organisation.

To find out more about the ISM contact us at membership@ism.org or call 020 7221 3499.

ism.org

The Save Music campaign, launched in October 2018 by The Incorporated Society of Musicians, is calling for freedom of movement to be maintained for musicians after Brexit – or failing that, a two-year working visa which allows musicians to tour easily in EU and EEA.

SAVEMUSIC.ORG.UK
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