Risk Assessment

**COVID-19**

**1.0 Background**

The Lakes & Craters Band (L&C) suspended rehearsals in March 2020 in line with an Australia wide lockdown designed to prevent community transmission of COVID-19. With the easing of restrictions in Victoria, L&C resumed rehearsals in June 2020. This was done with the warning to members that they should not come back to rehearsals if they had concerns regarding their personal health and risk of infection. L&C is aware that some ensembles in surrounding areas took a more cautious approach and did not resume rehearsals at this time.

In choosing to resume rehearsing L&C has believed that the risk of COVID-19 transmission during a band rehearsal has been minimal. This has largely been due to the lack of cases in the area, but also due to the control measures that we have put in place that are outlined in this document (see section 3). L&C also considers that allowing its members to attend rehearsal is good for their mental health and wellbeing and helps maintain a sense of normality in these difficult times where many activities and events have been cancelled.

The L&C organisation takes very seriously its responsibility to keep its members safe. L&C have done their best to keep abreast of recommendations and directives published by the Victorian Department of Health and Human Services, but acknowledges that these guidelines have not specifically mentioned community bands or wind ensembles.1

L&C has become aware of a number of news articles that discuss the risks associated with playing musical instruments in particular wind instruments in an ensemble setting in relation to the transmission of the COVID-19 virus.2–6 In response to this L&C has looked for data and scientific findings of relevance to the risks of virus transmission caused by wind instrument function (see section 2.0)

**1.1 Purpose**

The purpose of this risk assessment is to identify COVID-19 transmission risks at band rehearsal; to outline control measures to reduce this risk and to provide analysis for determining if/when band rehearsals should again be suspended.

This risk assessment is intended to aid with the ongoing determination of how safe it is for our members to attend rehearsal and to keep members informed of the COVID-19 risks associated with attending rehearsal.

**1.2 Hazard – COVID-19**

The following descriptions can be found on the World Health Organisation (WHO) website:7

*“Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus.”*

*“Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment.  Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.”*

COVID-19 presents in a similar manner to influenza and both viruses are transmitted through contact, droplets and fomites. The disease is known to have a relatively high mortality rate, long incubation period and a high infection rate.8

**2.0 Literature Review – Wind Instruments and Respiratory Disease**

The playing of wind instruments during a global pandemic of a respiratory disease presents unique considerations requiring meaningful data to assess. In search of this data the Vienna Philharmonic orchestras recently took part in a study involving devices being inserted into their noses which made a fine mist visible when they breathed. This study concluded that musicians faced no added risk of transmitting the novel coronavirus when performing.4

They noted that the maximum distance of breath droplets was emitted by flute players, but that this distance was less than the spacing requirement for social distancing. Another study with the Bamberg Symphony Orchestra tracked airflow from wind instruments had similar findings.5 The director of this orchestra noted “(instruments)… hardly releases any aerosols because the air flow in the instruments is slowed down where the sounds are generated.” Neither of these studies were peer reviewed or published in a journal and they might not tell the whole story.

Otolaryngologists Schwalje and Hoffman from Iowa have made available a “Wind Musicians’ Risk Assessment in the Time of COVID-19” in which they discuss the “Specific Risks of Wind Playing”. A number of the risks which they discuss can be greatly reduced or eliminated through appropriate control measures (See section 3). However, they note that the “Issue of Aerosols” is the most concerning. They mention that Vienna and Bamberg studies did not adequately address aerosol generation which “…can hang in the air for extended periods of time and can be infectious”. Schwalje and Hoffman say that whilst most instruments would not create a strong airflow, with the possible exception of the Flute, it is more important to consider the

deep breathing required for woodwind playing possibly creates an increased risk of aerosolization.9

The risk assessment carried out by Schwalje and Hoffman is neither peer reviewed or published in a journal, but they do attempt to reference scientific studies. They claim that only one peer reviewed, published study on wind “instruments” and aerosolization existed at the time of writing their assessment. This journal article is publicly available online and is titled “Propagation of Respiratory Aerosols by the Vuvezela”.10 In this study aerosol particles were measured from the bell of a 63mm long plastic vuvezela, in direct line with the players buzzing lips and this was compared to the aerosols particles generated from someone shouting from the same distance. This study found a similar number of aerosol particles compared to shouting. It is difficult to know the effect of various factors, especially airflow, that make all of the instruments in a band very different from a vuvezela, but we should be wary of directly extrapolating this data.

L&C does not have access to all of the resources required for a thorough review of the scientific literature, but thankfully this undertaking was recently completed by Public Ontario Health in their study ‘COVID-19 Transmission Risks from Singing and Playing Wind Instruments – What We Know So Far’.11

Two of the key findings by Public Health Ontario were:

*“To date, there is no evidence that wind instruments increase the risk of COVID-19 transmission, either through the expulsion of infectious respiratory droplets or transfer of fomites from the wind instrument.”*

*“There is evidence that playing wind instruments may generate droplets and/or aerosols, and that instruments themselves could become contaminated with infectious pathogens. The degree to which this contributes to the risk of COVID-19 transmission is unclear.”*

Of most interest to L&C, Public Health Ontario included a section titled “Respiratory Droplet Production by Wind Instruments”. Given their access to the scientific literature what was included in this section is of extreme importance to us. They quote Schwalje & Hoffman’s concerns regarding aerosolization, but do not offer any studies or data in support of this. They do offer analysis of what they clearly consider to be the three most relevant studies. The first is the “Propagation of Respiratory Aerosols by the Vuvezela”, which we have already discussed, they similarly note that “…one cannot generalize these finding to other wind instruments.” The second and third studies are the airflow experiments conducted with the Vienna and Bamberg orchestras – it should be noted that L&C has not had direct access to either of these studies. Interestingly, they mention the control measures investigated in the study with the Bamberg orchestra including using cloth coverings and that another study had similar

suggestions. L&C was able to access this additional study12 and has made use of their suggestions for controlling risk of droplet spread.

We should note that whilst Public Health Ontario mention 8 studies where choirs have been associated with transmission of COVID-19 as well as numerous studies where choirs have been connected with the pathogen transmission of other respiratory diseases, it does not appear that wind instruments have ever been connected to the outbreak of any respiratory disease. This is perhaps significant.

Linsey Marr at Virginia Tech & Shelly Miller at the University of Colorado are both leaders in the field of aerosols. Both have commented publicly about the risks of wind instrument playing and COVID-19, as well as about the need for more data in order to understand what these risks really are and have indicated plans to research this area further.2,3 An outline of Miller’s intended research can already be found online, the working title for this research is “Aerosol Generation from Playing Band Instruments and Risk of Infectious Disease Transmission”.13

It is important that L&C keep a look out for new research as it becomes available.

**3.0 Risks & Controls**

The COVID-19 virus is transmitted through contact, droplets and fomites. Potential for transmission risk and ways to control this are discussed. Where possible advice & directives from the Victorian DHHS will be taken into account.1These measures will remain in place until such time as advice deems it unnecessary.

**3.1 Contact**

*Risk*

Virus is communicated directly from person to person contact.

*Control*

L&C prohibits shaking hands, hugging, kissing or on other form of person to person contact at rehearsal. In addition, members are directed to remain at least 1.5m from any other member whenever possible. In the event of accidental skin to skin contact L&C advises immediate sanitisation of effected area.

*Effect*

These control measures should almost entirely eliminate this risk.

**3.2 Fomites**

The COVID-19 virus is known to survive for some time on a variety of surfaces.1

*Risk*

Virus is transmitted from the reed or mouthpiece of one player directly to the mouth of another player.

*Control*

L&C prohibits the sharing of instruments in particular reeds or mouthpieces. Members are also advised to be careful where they place their instruments and to take care not to inadvertently pick up someone else’s instrument.

*Effect*

Risk largely eliminated.

*Risk*

Virus is transmitted from a chair, music stand, music folder or similar object used by members in rehearsal who might then touch their face and become infected.

*Control*

Where possible members will collect their own chair, music stand, music folder etc. to reduce risk of cross contamination. Since there remains a risk that some of these items might at some point become contaminated members are reminded to sanitise their hands before and after collecting items as well as to refrain from touching their face.

*Effect*

Risk cannot be eliminated, but has been greatly reduced.

*Risk*

Virus is transmitted from door handle or other object touched by multiple people.

*Control*

Where possible object/s will be sanitised regularly. In addition, members are advised to sanitise their hands at key moments, such as directly after entering. Members are

also discouraged from unnecessary touching or objects and reminded not to touch their face.

*Effect*

Risk cannot be eliminated, but has been greatly reduced.

**3.2 Droplets**

Droplets can include large droplets that immediately fall to the ground as well as very small particles which do not. The smallest particles will quickly evaporate, but those that are slightly large may remain airborne for a considerable period of time.14

*Risk*

Large droplets from coughing, sneezing, talking or blowing air directly transmit virus from one person to another

*Control*

Members are advised that coughing or sneezing should be done into an elbow or similar barrier. Members are reminded to social distance at least 1.5m. Members are instructed not to buzz into a mouthpiece or reed that is not attached to an instrument.

\*Addition control can be afforded through mask wearing. This can be extended to what could be described as instrument masks. For brass instruments this involves putting a cloth covering over the bell. For woodwind instruments this involves putting

the entire instrument inside a cloth bag with provisions for hand to either go inside bag or control keys from the outside of the bag. For the flute the cloth covering must extend to also function as a face mask in order to catch the high airflow generated across the lip plate.

*Effect*

This risk has been greatly reduced without the use of masks, but the addition of masks should make this risk virtually eliminated.

*Risk*

The droplets collected with condensed moisture inside instruments which fall from the bells of woodwind instruments or are emptied from slides and water keys on brass instruments become a source of transmission of virus.

*Control*

L&C will provide disposable plastic bin liners to collect this liquid. Members will be reminded to take care not to step in or spread this liquid in any way and will dispose of their own plastic liner and collected liquid at the end of rehearsal.

Effect

The risk posed by this liquid should be greatly reduced.

*Risk*

Contaminated aerosols particles concentrate in the air and reach levels high enough to cause transmission of virus

*Control*

1. Ensure adequate ventilation in rehearsal venue to reduce concentration of particles over time.
2. Implement instrument masks described in previous control measures.

Effect

The level of risk of this transmission is very difficult to ascertain, many aspects of aerosol transmission are both complex and under researched. However, we can be confident that the control measures described should significantly reduce but not eliminate this risk. Cloth masks are not 100% effective, but do stop a significant percentage of particles.

\*We must also consider that mask wearing introduces a new and high risk fomite and care must be taken that it does not lead to a sense of complacency. Hand sanitisation must take an even more crucial role in managing this new risk.7

**4.0 Monitoring**

Up to this point the in this risk assessment we have assumed that in that case of the COVID-19 virus being unknowingly present at a L&C rehearsal we have taken measures to prevent the spread of the virus. However, it is important that we also outline reasonable steps to prevent the likelihood that L&C has a rehearsal where COVID-19 is present including guidelines for when increased risk should lead to the cancellation of rehearsals. For example, where a regular member tests positive to COVID-19 or the level of community transmission in Corangamite Shire is known to be sufficiently high rehearsals should be immediately suspended.

**4.1 Declaration of health status**

Members are asked not to attend rehearsal if they are sick or have symptoms that could be attributed to COVID-19, or if they have been in contact with anyone who has tested positive to COVID-19. Members must make a declaration as to their current status of health and have their temperature tested upon entry to rehearsal. In addition this information is kept by L&C along with their phone number so that this information can be immediately handed over to aid with contract tracing if a member tests positive to COVID-19.

**4.2 Monitoring Cases and State Guidelines**

L&C regularly checks the COVID-19 updates on the Victorian DHHS website as well as the covidvictoria.com map which allows monitoring of the number of active cases in Corangamite Shire and neighbouring localities.

**4.3 Updates & New Restrictions**

At the time that this risk assessment, state wide mask wearing is about to be required, the implications of this to the safety of continued rehearsal is being reviewed in light of the factors discussed in this risk assessment. Suspended rehearsals as well as the added control of measure of \*Instrument Masks will be assessed and discussed with members.

**5.0 Conclusion**

L&C is taking all reasonable measures to ensure the safety and wellbeing of its members. Many of the risk factors associated with transmission of COVID-19 can be controlled, but the production and spread of aerosol particles remains a factor of concern and uncertainty.

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