



Coronavirus COVID-19

BC Centre for Disease Control | BC Ministry of Health



B.C. Aerosol Generating Medical Procedure (AGMP) Expert Group Decision Summary: Intranasal Naloxone

March 15, 2021

This decision summary is intended for health-care providers and is based on known evidence as of January 8, 2021.

Request and decision

The B.C. AGMP expert group reviews medical procedures being performed on patients with suspected or confirmed COVID-19 in health-care settings in B.C. The expert group does not provide personal protective equipment (PPE) guidance.

The B.C. AGMP expert group received a request from Vancouver Coastal Health to determine if administration of intranasal (IN) naloxone is an aerosol generating medical procedure (AGMP). The B.C. AGMP expert group determined intranasal naloxone is not an aerosol generating medical procedure.

B.C. AGMP expert group review

Evidence review

The B.C. AGMP expert group conducted a literature search to identify relevant primary evidence, review articles, and guidelines/recommendations from governing bodies, medical societies and other expert groups (see appendix on page 4).

Assessment

The B.C. AGMP expert group assessed the search results for evidence quality and source using the provincial AGMP decision framework.



The expert group did not find studies providing direct evidence for airborne transmission and/or increased risk of transmission of infectious pathogens normally transmitted by the droplet and contact route, or indirect evidence for increased risk of aerosol production (defined as particles 5 microns or smaller) from real-world IN naloxone administration. As such, the expert group considered biological plausibility and expert opinion of other groups to make its final decision:

- Looking at the administration of IN naloxone in and of itself (pushing the plunger of solution into the nasal cavity), the only particle generation by the patient that could result from this procedure is from the patient exhales after administration. From a mechanical perspective, this particle generation would be comparable to particle production from typical exhalation which does not warrant AGMP status.
- In addition, a person receiving IN naloxone may be sneezing as they wake up. This would not create particles beyond what would be produced by sneezing in the absence of IN naloxone administration. Sneezing as a result of a procedure does not warrant AGMP status.

The expert group also determined that oxygen administration and/or bag-valve-mask (BVM) ventilation is distinct from IN naloxone administration, for reasons related to the context in which IN naloxone is typically given:

- IN naloxone is typically only seen in first responder contexts, given by bystanders or people in the community who may not have had training or access to oxygen or a BVM device.
- A significant portion of people who end up getting naloxone in the community setting do not end up requiring oxygen. For those who do need oxygen, the guidance on oxygen administration has changed during the COVID-19 pandemic. In the past, ventilation came before naloxone administration, but now this order is reversed.

There would also be negative impacts on people requiring IN naloxone if it was dependent on BVM ventilation:

- Delaying administration to those who would benefit from IN naloxone and do not need BVM ventilation may lead to poorer outcomes.
- Disproportionate impact on indigenous and First Nations communities for whom IN naloxone is available for overdose response and harm reduction.

Considerations

The decision framework used by the B.C. AGMP expert group is best for procedures performed in health-care settings following the hierarchy of infection and exposure control measures, by trained health-care workers using droplet and contact precautions, and relevant PPE for suspected or confirmed COVID-19 patients. IN naloxone may be administered in non-health-care (e.g., community) settings by non-health-care workers who do not have access to medical grade PPE and control measures available in health-care settings.

Given that administration of IN naloxone can be a matter of life and death, it is important not to introduce any unnecessary barriers to life-saving interventions. Therefore, it is important for health authorities to provide personal protective equipment guidance, where possible or necessary, on safe administration of IN naloxone in community settings. Please refer to the [BCCDC's COVID-19: Harm Reduction and Overdose Response](#) document for additional information on responding to an overdose in the community.



Appendix: Evidence pertaining to IN naloxone and AGMP status

Search date: January 8, 2021

Objective

To summarize the current evidence used by the B.C. AGMP expert group to inform its recommendations pertaining to IN naloxone and AGMP status.

Methods

The B.C. AGMP expert group searched databases (Cochrane, PubMed, Google Scholar) for relevant primary evidence, review articles, and guidelines/recommendations from governing bodies, medical societies, and other expert groups.

Search terms used:

The B.C. AGMP expert group used "nasal" or "intranasal" AND "spray" AND "aerosol" or "airborne" in the search. 167 article titles were read and four articles were extracted for abstract reading. This was further narrowed down to one relevant article (Tan et al.) to inform the expert group's deliberations.

The group used "nasal" or "intranasal" AND "transmission" OR "disease" OR "airborne" OR "aerosol" AND "naloxone" in the search. 20 article titles were read and one relevant article was identified (Leong and Verbeek).

Results

Findings from the literature search ultimately identified two relevant articles summarized in Table 1 (below).

The article by Leong and Verbeek is a letter to the editor from physicians at the Sunnybrook Centre for Prehospital Medicine in Toronto presenting reasons for not considering IN naloxone as an AGMP. The article by Tan et al. reports on the findings from a study that measured droplet dispersal patterns during nasoendoscopy using high-speed video with laser light illumination. Droplet formation was observed during sneezing and administration of a nasal decongestion spray. The authors provide recommendations for reducing droplet production.

One technical brief from a government body (Public Health Ontario) is summarized in Table 2. It specifically notes that sneezing alone as a result of a procedure does not warrant AGMP status.

Conclusion

The B.C. AGMP expert group concluded that aerosol generation from IN naloxone administration cannot be drawn from the articles found.

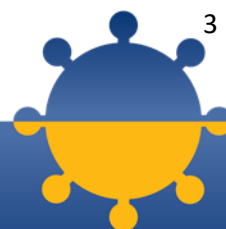


Table 1: Evidence summary

	Study Type	Article Title and Authors	Findings
1	Original article	Respiratory droplet generation and dispersal during nasoendoscopy and upper respiratory swab testing Tan et al.	Droplet formation observed only under three scenarios during nasoendoscopy: sneezing, vocalization and administration of an intranasal decongestion spray. Most droplet production occurred with nasal expiration immediately after nasal decongestion spray. Equipment used only measured particles over 10 microns (μm) in size so aerosols below 10 μm were unlikely captured. Recommendations from the authors to reduce droplet dispersion are: <ul style="list-style-type: none"> • Pull the patient’s face mask down partially and keep the mouth covered, only allowing nasal access during nasoendoscopy. • Avoid nasal sprays if possible; if nasal sprays are used, procedurists should be in full PPE prior to using the spray.
2	Letter to editor	Does IN naloxone administration increase the risk of 2019 coronavirus disease transmission? Leong and Verbeek	Administration of intranasal naloxone should not be considered an AGMP. Nasal naloxone produces particles where 90% are > 60 μm in size. Recommendation from the authors to apply a surgical mask to patients emerging into consciousness due to potential for sneezing.

References:

1. Tan VYJ, Zhang EZY, Daniel D, et al. Respiratory droplet generation and dispersal during nasoendoscopy and upper respiratory swab testing. Head & Neck. 2020;1–3. <https://doi.org/10.1002/hed.26347>
2. Leong YC, Verbeek PR. Does intranasal naloxone administration increase the risk of 2019 coronavirus disease transmission? Canadian Journal of Emergency Medicine. 2020;22(6): e20. doi:[10.1017/cem.2020.395](https://doi.org/10.1017/cem.2020.395)
<https://www.cambridge.org/core/journals/canadian-journal-of-emergency-medicine/article/does-intranasal-naloxone-administration-increase-the-risk-of-2019-coronavirus-disease-transmission/F4114C24D56BF64355E9C48222A99960>

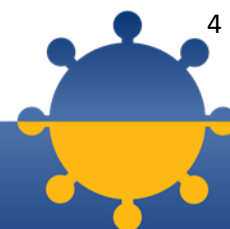


Table 2: Guidelines and recommendations from governing bodies, medical societies, and other expert groups

	Agency/Article Type	Title	Stance on IN Naloxone as an AGMP	Statements on AGMP and IN Naloxone
A	Public Health Ontario/Technical Brief	COVID-19: Aerosol Generation from Coughs and Sneezes	IN medication administration, such as naloxone, is not an AGMP.	<p>Epidemiology of the infection has been demonstrated not to be airborne.</p> <p>A cough or sneeze is not considered an AGMP and thus procedures that may cause a cough or sneeze would not be classified as AGMPs.</p> <p>Patients with COVID-19 who cough and sneeze can be cared for while wearing a surgical mask and eye protection.</p>

Reference:

- A. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Focus on: Aerosol generation from coughs and sneezes. Toronto, ON: Queen's Printer for Ontario; 2020. <https://www.publichealthontario.ca/-/media/documents/ncov/ipac/report-covid-19-aerosol-generation-coughs-sneezes.pdf?la=en>

