To reduce the prevalence of lower respiratory tract infec-
tion in infants in the Canadian Arctic requires specific
medical measures; but medical measures alone are insuf-
icient. Only by also addressing the social determinants of health
experienced in the region will we see a lasting effect on the health
of these infants. In addition, we recommend routine surveillance
of lower respiratory tract infections in infants in Canada to track
the frequency and progress of infections and to identify emerging
pathogens in at-risk populations.

In recent CMAJ Open research articles,1,2 Banerji and col-
leagues focus on infants in Arctic Canada and confirm the impor-
tance of lower respiratory tract infection in infancy as a driver of
health care costs, something true for all communities. The
authors highlight the burden experienced by infants and their
families in northern Canada, given the difficulty and incon-
venience of long travel distances for medical assessment and
hospital care. Of the 348 admissions for lower respiratory tract
infection among 293 infants in their study, 66 were to tertiary
care centres in southern Canada, which further increased the
burden on families and costs to the health care system.1 In addi-
tion, one infant died in transit. As in all such studies, respiratory
syncytial virus was the single most common pathogen, found in
124 cases (41.6% of those tested), alone or as coinfection. The
evidence in these studies and additional literature is that respira-
tory syncytial virus and influenza A are the most important
pathogens, and ones for which we have preventive measures.

The Public Health Agency of Canada specifically recommends
influenza vaccination for children aged 6–59 months and for
Indigenous people because both groups are at high risk of influ-
enza-related complications or hospital admission.3 Infants and
children in the Indigenous population experience disproporti-
nate morbidity from infectious disease, often because of over-
crowded living conditions. Therefore, influenza vaccination
should be as close to universal as possible to limit infection. But
effective prevention of lower respiratory tract infection in infancy
requires more than this specific preventive measure. Prevention
of respiratory syncytial virus infection might be helped to some
extent by nonspecific measures such as rigorous handwashing.

However, in the absence of active immunization, more wide-
spread use of monoclonal antibody palivizumab should be con-
sidered.

There is no vaccine for respiratory syncytial virus. This was the
pathogen most associated with severe lower respiratory tract
infection (defined as requiring mechanical ventilation or cardio-
pulmonary resuscitation, or death) in the study by Banerji and
colleagues.1 In all such studies, respiratory syncytial virus was the single most common pathogen, found in
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KEY POINTS

- There is a high prevalence of lower respiratory tract infection
  among infants in the Canadian Arctic, especially in Nunavut.
- The burden of disease on Indigenous infants and their families
  in northern communities, and on health care systems, is
  influenced by social determinants of health.
- Reducing the prevalence of lower respiratory tract infection
  requires specific action, such as increasing influenza vaccination
  coverage in northern Canada and widening the use of
  palivizumab prophylaxis in some healthy term infants.
- To improve health outcomes in northern Canada, social
  determinants of health must be addressed, specifically
  overcrowded housing, food security and access to health
  services.
A recent position statement on the use of palivizumab from the Canadian Paediatric Society led to immediate expression of concern of the major focus on cost. In relation to remote communities, the statement says “[c]onsideration may be given to administering palivizumab during [respiratory syncytial virus] season to term Inuit infants until they reach six months of age only if they live in communities with documented persistent high rates of [respiratory syncytial virus] hospitalization.” The statement is qualified by emphasizing that “the first priority should be to provide palivizumab to infants with prematurity, [chronic lung disease] or [congenital heart disease],” without giving details of prioritization. Palivizumab is currently being used in Indigenous and northern communities, but with problems in adherence.

One striking finding in the surveillance study by Banerji and colleagues were lower rates of hospital admission reported in Yellowknife (39 per 1000 live births) compared with Nunavik (456 per 1000 live births). Lest we feel complacent about Yellowknife, the authors note that the rates reported are at the high end of those seen in the United States. Variations in rates of admission for lower respiratory tract infection between institutions are common, mainly owing to variation in physician practice. Both studies by Banerji and colleagues suggest a partial explanation that the marked difference in rates between Northwest Territories and Nunavut may be caused by a genetic predisposition in Inuit to severe disease. The authors also suggest that variation in admission rates are aggravated by social determinants of health. Social determinants of health contribute to disease prevalence more than variation in physician practice.

Targeted interventions, such as specific guidelines for palivizumab treatment, are necessary but insufficient. More general interventions aimed at mitigating the effects of social determinants of health will address a magnitude of health issues. The health status of Indigenous peoples in northern communities is attributed specifically to overcrowding due to housing shortages and the need for equitable access to health services. Geographic limitations and isolation will make it difficult to reorient health services to increase access. Banerji and colleagues outline strong limitations and isolation will make it difficult to reorient health services. Commitment to monitoring health services and programs is necessary everywhere, but especially in remote Indigenous communities, where gaps in health coverage are far too common. Indigenous infants in northern communities are at a marked health disadvantage. Coordinated effort is required by federal, territorial and local governments to address health inequities and increase access to health care in the Canadian Arctic.

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