

Title of project: A progress update on the implementation of a multi-faceted intervention to spread and scale bronchiolitis appropriate care in Alberta.

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Background: Acute viral bronchiolitis is among the most common illnesses seen in the emergency department (ED) and is the leading cause of infant hospitalization in Canada. Successful implementation of an audit and feedback (A&F) intervention at the Alberta Children’s Hospital (ACH) reduced use of low-value interventions and tests for bronchiolitis. Opportunities to improve bronchiolitis management are likely also present in other urban and rural settings. This project will spread and scale the work completed at ACH to 16 sites across Alberta focusing on children under one-year diagnosed with bronchiolitis who managed both in ED and inpatient settings.

Methods: Site implementation included two key aspects:

1. Audit & Feedback (A&F) – review practice data, facilitated discussion with clinicians and their teams, and identify enablers and barriers to practice change.
 - a. The seasonality of bronchiolitis cases (November to April) helped inform the frequency of A&F feedback reports: mid-season (February) and end-of-season (April)
 - b. Clinical dashboards are being developed within the new clinical information system – ConnectCare - that will provide teams with real-time feedback on potential practice change.
2. Site Specific Implementation Plan – Resources are tailored to fit site needs including the use of posters, handouts and practice guidelines; utilization of order sets; and staff and family education resources.

The bronchiolitis initiative is eligible for Continuing Medical Education accreditation through a newly developed easy-to-navigate web-based tool, My Practice Improvement – MyPI. An Education Working Group consisting of patient and family advisors was developed. Family resources included a QR code handout to a “How to suction your baby’s nose” instructional video to help parents/families care for their child at home. The HEAL handout provided links to additional resources for families. Family centred care participants were consulted on the development of a family resource: “Bronchiolitis: A roadmap from admission until discharge”.

Evaluation Methods: The primary objective of the study is a 25% absolute reduction in chest radiograph use. Chest x-rays utilization can be readily obtained from administrative data at all sites in the project. Return visits to the ED within 72 hours of discharge will be monitored as a balancing measure to assess potential unintended consequences of de-implementing low-value

tests and interventions in the ED. The provincial rollout of ConnectCare and tableau dashboard integration will enable a broader array of tests and treatments that are used in the management of bronchiolitis to be reported. The spread and scale of this project has now engaged with ED sites in non-tertiary settings in urban and rural areas where patient demographics and resource availability could pose additional challenges. Providing education and resources for these sites is one way to ensure equitable healthcare access for all Albertans.

Results: Six facilities implemented rollout from September to November 2021 with a total of 151 physicians attending the A&F sessions. Chest x-ray use at sites that had a 2021 session compared to sites with a planned session in 2022 revealed a decrease after one bronchiolitis season. A difference in difference analysis between the two groups demonstrated that sites with a 2021 session had a -14.3% (95%CI -21.4 to -7.1) decrease in chest x-ray use. As of November 17, 2022, there have been 12 A&F sessions attended by 255 physicians, nurses and respiratory therapists.

Advice and Lessons Learned:

- 1) Capacity for scale and spread initiatives should be accounted for early in planning processes. We brought on two additional medical leads to facilitate sessions in fall 2022 due to an increase in the number of sites involved. Without the additional assistance, the success of roll out may have been jeopardized.
- 2) Flexibility is key. Several sites across the province are continuing to deal with staffing shortages and recent high volumes of influenza, RSV and COVID are putting EDs over capacity. Sites have demonstrated incredible flexibility with engagement and session availability despite these circumstances. We changed session dates to help balance workloads as some sites had ConnectCare implementation concurrent with the start of the bronchiolitis season.