Bronchiolitis Management by Calgary Pediatric Emergency Physicians

Reducing low-value care through multi-disciplinary, group facilitated audit and feedback

Project Partners

Alberta Children's Hospital
All Calgary Zone emergency departments

Physician Learning Program

2018

Background

Bronchiolitis is a frequent viral infection presented in emergency departments and hospitals in Canada; it affects more than one third of children under two years old and is the leading cause of hospitalization in infants under 12 months old. Despite strong evidence and practice guidelines recommending supportive care as the mainstay of management for most infants with bronchiolitis, prior studies have found that many of these patients receive low-value care such as viral testing and x-rays.

Diagnosis and Treatment		
Recommended	**Evidence Unclear**	**Not Recommended**
Oxygen	Epinephrine nebulization	Salbutamol
Hydration	Nasal suctioning	Corticosteroids
	3% saline nebulization	Antibiotics
	Epinephrine + dexamethasone	Antivirals
		Cool mist or saline aerosol
		Chest x-ray
		Complete blood count
		Blood gases
		Nasopharyngeal swab
		Bacterial culture

Summary of the 2014 Canadian Paediatric Society Recommendations for the diagnosis, monitoring and management of children under 24 months old with bronchiolitis

Objective

This project was initiated by the Physician Learning Program (PLP) and physicians at the Alberta Children's Hospital. Three project objectives were identified:

1. Establish baseline management of bronchiolitis by pediatric emergency department physicians
2. Deliver multi-disciplinary, group facilitated audit and feedback session to identify strategies for practice improvement
3. Evaluate effects of intervention

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Project Summary

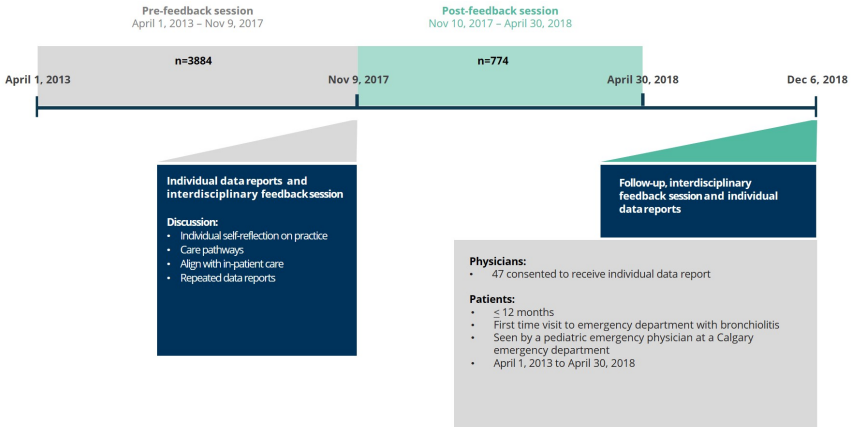
We identified patients ≤ 12 months old who were diagnosed with bronchiolitis and seen at any of the seven emergency departments in Calgary by a pediatric emergency physician between April 1, 2013 and April 30, 2018. Using administrative data, we captured baseline characteristics, therapeutic interventions and investigations. Consenting pediatric emergency physicians received two audit and feedback reports including their individual data with peer comparators.

On November 9, 2017, physicians, nurses and respiratory therapists participated in a multi-disciplinary, group facilitated audit and feedback session. After reviewing individual and aggregate data, participants identified barriers and enablers of reducing low-value care. Two peer physicians facilitated the discussion using the Calgary Audit and Feedback Framework.

To assess the effects of the intervention, we collected data for six months following the facilitated audit and feedback session. On December 6, 2018, we hosted a second session.

Themes emerging from this discussion included the following:

- Group's reduction of low-value tests and medications
- Continuing to align practice with nursing and in-hospital physicians
- Following newly released practice order set



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Conclusion

Post-intervention data showed a decrease in patient length of stay and a decrease in tests and treatments ordered.

	All Patients (n=4658)			
	Pre-feedback (n=3884)	Post-feedback (n=774)	Absolute Change	Relative Change
Tests Ordered				
Chest x-ray	805 (21%)	136 (18%)	3%	14%
Respiratory Viral Tests	1240 (32%)	163 (21%)	11%	34%
Treatments Ordered				
Steroids	493 (13%)	42 (5%)	8%	62%
Salbutamol	843 (22%)	94 (12%)	10%	45%

	Pre-feedback (n=3884)	Post-feedback (n=774)
First Emergency Department (ED) Visit		
Length of Stay (mean hours)	3.3	2.9
Time from ED MD sign up to disposition (mean hours)	2.0	1.6
Time from ED to triage to disposition (mean hours)	3.1	2.9
Admitted to PICU, n (%)	92 (2%)	23 (3%)

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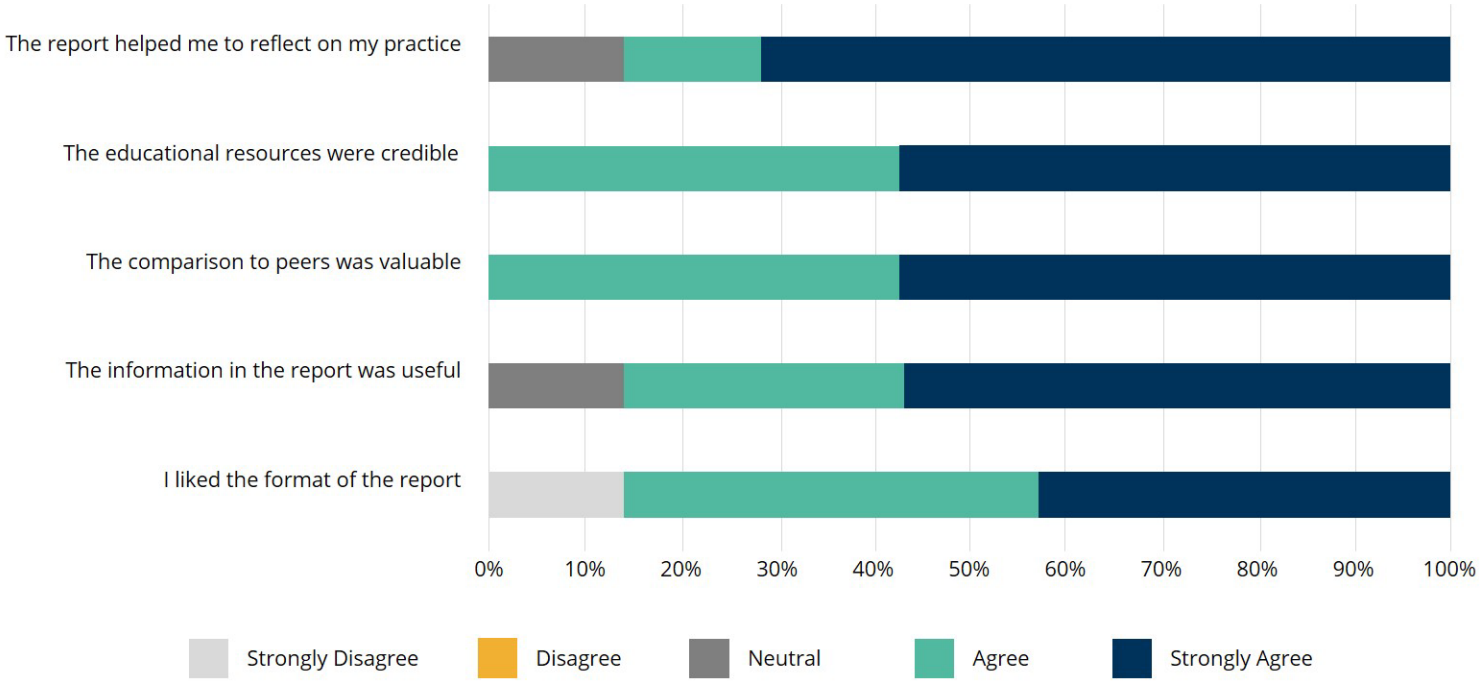
Providing individualized practice data reports to pediatric emergency department physicians and facilitating multi-disciplinary audit and feedback sessions highlighted performance practice gaps between current management and best clinical evidence/recommendations. Use of multi-disciplinary, group facilitated audit and feedback sessions can be an effective quality improvement strategy to reduce low value care.



This project has since been scaled and spread to Edmonton. In November 2020, PLP hosted an audit & feedback session with 40 healthcare staff at the Stollery Children's Hospital.

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