Impact of Bronchiolitis Guideline Implementation on Resource Utilization
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Problem:
Bronchiolitis remains a leading cause of pediatric hospital admissions and resource utilization. Considerable practice variation in bronchiolitis management contributes to inconsistent healthcare and wasted resources. We identified opportunities to align institutional practice and improve resource utilization.

Evidence:
Studies suggest implementation of clinical practice guidelines is associated with decreasing unnecessary resource utilization and streamlining medical care.

Strategy:
Reduce resource utilization of chest radiographs (CXRs), bronchodilators and antibiotics through implementation of institutional clinical practice guidelines (CPGs) for bronchiolitis management.

Practice Change:
Electronic clinical decision support facilitated effective implementation of guideline recommendations. Guideline driven order sets were applied. An order publicized patient enrollment in the CPGs.

Evaluation:
A multidisciplinary team developed and implemented bronchiolitis CGPs for hospitalized children less than 2 years old with primary or secondary diagnosis of bronchiolitis (ICD-9 466.11 and 466.19). Complex medical cases, ICU admissions, and outside hospital transfers were excluded. Implementation included provider education, easy CPG access, data sharing, and order set formulation. Resource utilization included ordering CXRs, antibiotics, or more than two doses of bronchodilators. Outcome metrics included length of stay (LOS) and readmissions.

Results:
Patients pre (N=1244; case mix 0.88) and post (N=1159; case mix 0.88) CPG implementation were similar. CXR utilization declined from 59.65% to 45.13% (P<0.05). Bronchodilator utilization decreased from 20.58% to 14.24 % (P<0.05). Antibiotic utilization was unchanged (37.06% vs. 35.20%; P=0.34). The LOS decreased from 2.42 to 1.79 days (P<0.05) and all-cause 7-day readmission rates (2.3% vs. 1.8%; P=0.45) were unaffected. Implementing bronchiolitis CPGs variably impacted resource utilization. However, LOS was reduced without increasing all-cause 7-day readmission rate.

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**Recommendations:**
Keys to success: Create processes in which opting into guidelines is effortless. Education on guideline recommendations is fundamental.

**Lessons Learned:**
Involvement of key stakeholders is instrumental to success. Implementation in stages is beneficial. Data sharing (individual and departmental) improves buy in and facilitates discussion.

**Bibliography:**


4. Bronchiolitis Guidelines Team, Cincinnati Children’s Hospital Medical Center (2010). Management of first episode of bronchiolitis in infants less than 1 year of age, Guideline 1, page 1-16.


