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Feasibility of Using a Pediatric Call Center as Part of a Quality Improvement Effort to Prevent Hospital Readmission[1]

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The primary aim of this intervention was to assess the feasibility of using call center nurses who are experts in telephone triage to conduct post discharge telephone calls, as part of a quality improvement effort to prevent hospital readmission. Families of patients with bronchiolitis were called between 24 and 48 hours after discharge. The calls conducted by the nurses were efficient (average time was 12 minutes), and their assessments helped to identify gaps in inpatient family education. Overall, the project demonstrated the efficacy in readmission prevention by using nurses who staff a call center to conduct post-hospitalization telephone calls.

REDUCTION OF HOSPITAL readmissions is receiving increased scrutiny; efforts are focused on readmission rates as a marker of quality of care as well as reducing the cost associated with preventable readmissions. Readmission rates for Medicare beneficiaries are reported at approximately 20% (Jencks, Williams, & Coleman, 2009), and many readmissions in the adult population are considered avoidable by improvements in care and discharge planning during the initial hospitalization (Halfon et al., 2006; Van Walraven et al., 2011). In the pediatric population a recent study reports a readmission rate of 8.4% (Gay, Hain, Grantham, & Saville, 2011), and another estimates that 20% of all readmissions are potentially preventable (Hain et al., 2012). Among non-surgical conditions, 15.9% of readmissions were thought to be preventable, and the diagnosis of bronchiolitis was associated with a slightly higher than average rate of preventability (16.7%), and bronchiolitis was one of the most common discharge diagnoses (Hain et al., 2012). While the overall resource utilization associated with pediatric readmissions is lower than in the Medicare population, interventions to prevent readmission within selected higher-impact conditions may be more likely to be cost effective.

The efficacy of single post-discharge interventions, such as phone calls or diligent assurance of outpatient follow-up care, to reduce avoidable readmissions is yet unclear (Coller, Klitzner, Lerner, & Chung, 2013; Hansen, Young, Hinami, Leung, & Williams, 2011). One adult study reports significantly fewer 30-day emergency department visits and a trend towards reduced readmissions among patients randomized to receive a post-discharge phone call from a pharmacists (Dudas, Bookwalter, Kerr, & Pantilat, 2001), and other randomized trials show no significant effect. Post-discharge calls were noted to be a common component of successful bundled readmission prevention strategies in the adult literature, but a systematic review showed that no

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single intervention implemented alone was reliably associated with reduced risk for rehospitalization (Hansen et al., 2011). The small but growing pediatric literature is inconclusive relative to best practices or evidence-based interventions that reduce hospital readmission.

Bronchiolitis is an acute respiratory illness that is often cited as the leading cause of hospitalization for infants. It accounts for 16.2% of all hospitalizations for children less than 2 years of age (Hasegawa, Tsugawa, Brown, Mansbach, & Camargo, 2013), and 4.1–4.7% of overall admissions to children's hospitals, the third most common single diagnosis after asthma and pneumonia (Keren & Shah, 2013).

In order to promote safety and quality of care, our hospital devotes significant resources to the development of evidence-based clinical care pathways (Clinical Standard Work, CSW). These CSW pathways are designed by committees of experts from various disciplines, who review the evidence to reach consensus about the most effective treatment strategies for a certain condition. Pathways seek to reduce variability in care as well as unnecessary care, thus also reducing charges and length of stay. The bronchiolitis pathway concentrates on frequent suctioning, with avoidance of radiography, laboratory tests, and bronchodilators, Figure 1.

As compared to average performance within PHIS (Pediatric Health Information System), a database comparing children's hospitals' performance for the purposes of quality improvement, our hospital has lower rates of chest radiography (33 vs. 52%), albuterol use (30 vs. 52%), racemic epinephrine use (2 vs. 18%), and antibiotic use (31 vs. 36%), all of which are desirable according to care recommendations by the American Academy of Pediatrics (AAP, 2006). However, during the 2011–2012 respiratory season, our rate same-condition of inpatient readmission within 7 days was slightly higher than the PHIS average, at 4.1 versus 2.6%. Two very important components of the bronchiolitis pathway are teaching for families about home care, particularly how to correctly perform nasal suctioning, and the need for a follow-up appointment with the child's primary care provider (PCP). Both of these components could be evaluated with a post-hospitalization phone call. Although no evidence exists to show that good nasal suctioning and early follow-up prevent readmission, many readmissions were for worsening respiratory symptoms that could theoretically be affected by these practices.

To better understand potential opportunities to improve pediatric practice and reduce readmissions, we conducted a pilot program involving telephone calls to parents of children discharged from our hospital with a diagnosis of bronchiolitis. The purposes of this project were:

1. To assess the feasibility of using call center nurses to conduct follow-up phone calls.
2. To understand the effort and time involved in making post-hospitalization telephone calls.
3. To assess the compliance with discharge instructions, particularly the early follow-up with the child's primary care provider (PCP).

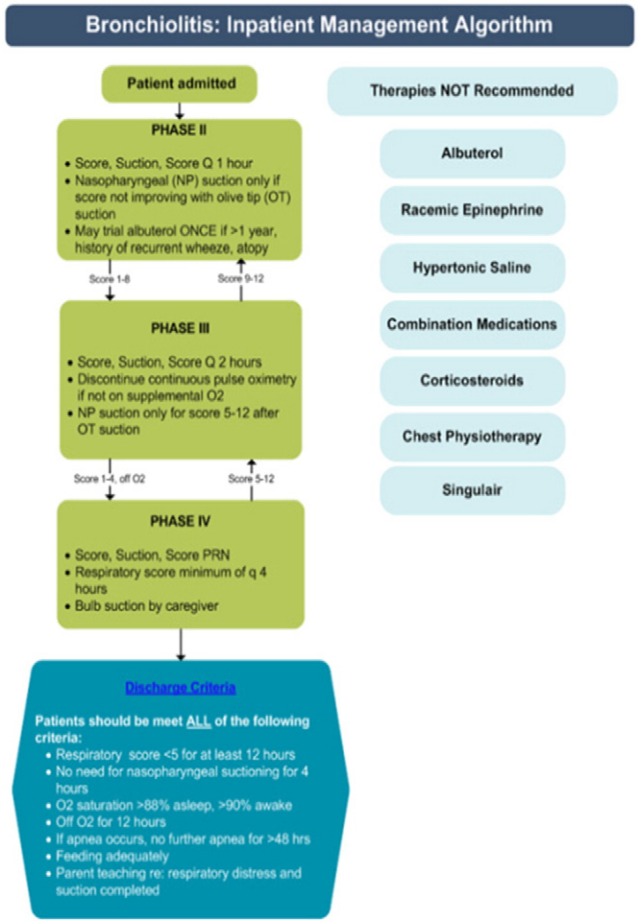

Figure 1 Bronchiolitis: inpatient management algorithm.

The institutional review board conducted a review and found this initiative exempt as it was solely for the purpose of improving quality of care.

Methods

Our hospital is a freestanding children's hospital, affiliated with a major university with both medical and nursing colleges. It is the tertiary referral center for pediatric care (0 to 21 years of age) serving a large catchment area (Washington, Alaska, Montana, Idaho and Wyoming) for the Northwest region. During the time period of this study, the hospital had 278 inpatient beds. Bronchiolitis was the fourth most common cause of overall admission and the most common cause of infant admission, accounting for 392 admissions in 2012 (2.7% of total overall admissions).

Our population included children who were discharged from the hospital on the bronchiolitis clinical pathway between December 17th, 2012 and April 1st, 2013. Follow-up calls were made between 24 and 48 hours after discharge by the Children's Consulting Nurse (CCN) team, a group of nurses trained in telenursing who staff a 24-hour nurse