

## IMPROVING PHYSICIAN MISSING CHARGES IN THE NICU USING INFORMATICS AND EHR

**Lead Author:** Bheru Gandhi, MD

**Contributing Authors:** Anne Debuysere, Barbara Berard, Lisa Owens

**Category:** Quality, Cost, Value

### Background

Missed physician charges are common in the Neonatal Intensive Care Unit (NICU) and lead to lost revenue. In our NICU, the weighted average daily physician charge is \$744. Causes for missed charges include lack of training in post graduate curriculums. Surveys indicate 81% of generalists and 78% of subspecialists wanted additional training. Also, paper based billing creates an additional step for physicians, which can lead to delinquencies in charge submission. With the development of advanced electronic health records (EHR), auditing and tracking has made identification of missing data elements more automated. Use of EHR with billing systems embedded in physician work flows may decrease missed charges.

### Objectives

To determine if interventions including physician education and EHR informatics support can reduce missing physician charges in the NICU.

### Methods

Beginning in October 2016, interventions were implemented to ensure timely and accurate physician charge entry. First, physicians were educated to improve billing practices through training videos, lectures, and billing quizzes. Next, patient lists in the EHR were modified to include visual markers of charge submission status and billing screens were altered to facilitate choosing the proper code. Daily audits of NICU census and physician charge submission were introduced to track missing patient charges. Monthly reports of billing errors were also generated to identify common billing mistakes to target physician education and recover missed charges. The number of missed physician charges in the pre-intervention period from January 2016 to September 2016 was compared using the paired t-test to post-intervention data collected from October 2016 to September 2017. We estimated the absolute dollar amount of submitted charges by multiplying each patient day by the average daily physician charge.

### Results

In the pre-intervention period, missing charges comprised 1,157 of 56,159 patient days (2%) compared to the post-intervention period where they comprised 360 of 68,365 (0.5%) patient days. This represents a 75% relative decrease in missing charges ( $p < 0.001$ ) and an increase of \$592,968 in charges submitted for reimbursement in the post-intervention period. Figure 1 shows no change in unit census but a decrease in the number of missing charges.

Baylor College of Medicine  
5th Annual Quality Improvement and Patient Safety Conference

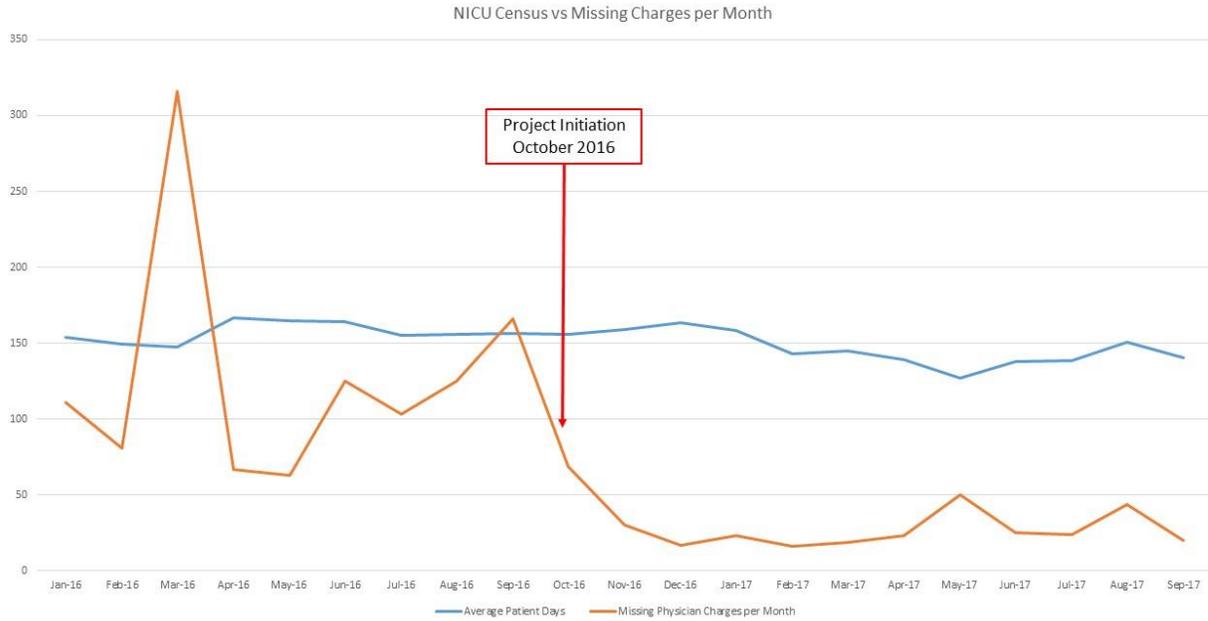


Figure 1: Average patient days versus the number of missing physician charges per month

**Discussion**

Using available technology in EHR and physician education, it is possible to decrease the number of missing physician charges in the NICU. Next steps are to automate physician specific missing charge reports to increase efficiency in recovering charges.