

Performance Improvement with Efforts toward Discharge Practices by Day of the Week

Background: Health plans are looking for solutions to manage high cost, complex intensive-care newborns while working with limited internal expertise in the care of this NICU (neonatal intensive care unit) population. In adult health care, clinical guidelines have become commonplace to promote standard approaches to the care of patients. These are aimed at clinicians with the goal of standardizing the approach to diagnosis and treatment of most clinical conditions. There have been few practice standards developed by NICU specialists and no benchmark data to compare the clinical management and outcomes of this population.

Background: Discharge from the hospital should be based on the patient's clinical status, adequate home environment and be independent of the day of the week or hospital staffing issues. Previous published work has demonstrated that the day of discharge home for infants admitted to a neonatal intensive care unit occurs significantly less frequently on weekends than weekdays. In addition, length of stay is longer for patients discharged on Monday than Saturday or Sunday discharges, which may be related to delay in discharge over the weekend.

Objectives: To evaluate the impact that variation of discharges by day of the week (DOW) has on length of stay and cost and to evaluate key factors to reduce this variation.

Methods: We retrospectively analyzed data from 2001 discharges from neonatal intensive care units in one geographical market on day of week discharges managed by a specialty management company for one health plan. With these results, we increased efforts on early discharge planning, adherence to a neonatal discharge guideline, and informed physicians and staff of DOW discharge variation at these hospitals within this market. A follow up analysis to measure performance improvement with these interventions was completed after one year of management. Each patient was assigned a baseline length of stay target based on birth weight and severity of illness, with the concept similar to an adult DRG coding.

Results: 632 patients from 2001 discharges (pre-intervention) were compared to 655 patients from 2002 discharges (post-intervention). Weekend discharged increased from 22.5% in 2001 to 24.1% in 2002 of total discharges, with expected totals to be at 28.6% of the population with an even distribution across the week. Length of stay compared to targeted base lines was reduced significantly ($p < 0.05$) from 99.5% in 2001 to 89.1% in 2002, or from 22.48 days to 19.56 days per infant. Cost savings are estimated at \$202,500 at a conservative cost per day at \$1500, with 1375 days saved due to increased efforts towards timely discharge.

Conclusions: The tendency toward weekday discharges may be related to several hospital and physician related variables, such as decreased weekend staffing levels, familiarity with the infant and the family, and the availability of home care and outpatient follow up. Increased efforts towards discharge planning can decrease the variation of day of week discharge, shorten hospital stay, and reduce costs. In addition, increased provider awareness on DOW practices can impact more timely discharges and affect health care costs. Health plans and disease management organizations can use this study and apply this principal as one solution to manage the high costs of complex cases.