Improving Quality Care Goals Through Diabetes Collaborative Rounds on an Exemplary Care and Learning Site

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The quality of diabetes management in hospitalized patients has been problematic for hospital systems on all levels. A 15% year-on-year increase in the number of inpatient days are consumed by people with diabetes and insulin requiring medical care accounts for half of the $374 billion dollars in total US expenditures for this disease (ADA, 2008). Over the past decade many studies demonstrate improved glycemic control in the acute care setting improves clinical outcomes, decreases complications, and can reduce acute length of stay (ALOS) as well. Faster methods and medication formularies to address inpatient hyperglycemia are more complicated than in the past. According to a study published by John Hopkins (Derr, et al, 2007), physician, resident, and nursing knowledge may not be adequate to ensure appropriate inpatient diabetes management. These teams challenge hospital systems to implement best practice strategies that will result in improved and sustainable changes in the care of patients with diabetes.

Purpose
Diabetes Collaborative rounds on an exemplary Care and Learning Site (eCLS) is an attractive platform for leading innovation in quality improvement. The purpose of this cohorted unit is to improve interdisciplinary communication and efficiencies by keeping resident teams, attendings, staff and resident covered patients together whenever possible. This process and outcome from our diabetes project highlight the importance of the core competencies in resident education.

Methods
A 3 day rapid improvement event using Toyota LEAN tools (system/approach to eliminate waste and enable continuous improvement) was conducted to develop a working model for collaborative rounding on the ECLS. An endocrinologist and a certified diabetes nurse educator were designated as project champions in collaboration with residency program directors. Baseline medical knowledge of diabetes was measured for interns, residents, nursing staff and attendings using a validated tool. This showed our baseline knowledge was low, but comparable to that reported in the literature. Prior to any intervention baseline patient data on the ECLS was measured glucose measurements, rates of hypoglycemia, rates of hyperglycemia, complications of diabetes, admission rates, patient satisfaction, length of stay, severity of illness. Starting in April ’09, ongoing weekly interdisciplinary didactics, yellow car sessions were planned by the diabetes specialist to all members of the eCLS floor that could attend. Topics focused on oral hypoglycemics, insulin drip protocols and clinical scenario discussions. Additionally, weekly interdisciplinary collaborative rounds were performed on complex patients with diabetes. Residents were expected to lead this team of physicians, nurses, diabetes educators, medical students, pharmacists, case managers and other pertinent staff members. These occurred at the patient’s bedside if the situation permitted. Collaborative rounds provided a forum for improving resident medical knowledge and communication skills. This patient centered approach identified barriers to patient success and substantially improved discharge planning. Collaborative rounds facilitated more appropriate ancillary support for patients and this occurred much earlier in the patient’s hospital stay preventing delays in discharge.

Results/Discussion
As a direct result of our intervention significant reductions in hyperglycemia were achieved thus decreasing our “at goal” glucoses within the range of 70-180. There was a significant trend for continued improvement for “at goal” glucoses on the ECLS floor. During the same time frame a control cohorted hospitalist group (non resident covered) showed worsening control without a similar intervention (graph 1). Our intervention produced a dramatic and sustainable (15.9 day reduction in ALOS, overall 42 days less than the control group on 4.3) Resident medical knowledge regarding diabetes management increased by approximately 3% based on follow up testing. Improved glycemic control and decreased ALOS were achieved even though severity of illness remained unchanged in patients admitted to the resident ECLS floor (graph 2). The success of the intervention shows attention to Practice Based Learning and Improvement, Interprofessional and Communication Skills and Systems-Based Practice can directly translate into improved quality measures in patients with chronic medical illnesses.