

# Implementation of a patient safety initiative for the prevention of hospital acquired pressure ulcers.

## INTRODUCTION

Pressure ulcers remain a major problem in health care today. It costs an estimated 2.2 to 3.6 billion dollars a year to treat the 1.6 million pressure ulcers that develop annually in U.S hospitals (Beckrich & Aronovitch, 1999). Not only are pressure ulcers costly in terms of health care dollars but also to patient's quality of life causing suffering, possible infection and even death. Prevention is the preferred management strategy for patients at risk for pressure ulcers. For these strategies to be effective there needs to be reliable identification of patients at risk and early implantations of preventative measure.

## OBJECTIVES

- Reduce the incidence of nosocomial pressure ulcers in multiple facilities in a large integrated health care system.
- Standardise use of the Braden scale in all Sutter facilities to identify patients at risk for pressure ulcer.
- Educate staff regarding the use of the Braden scale and pressure ulcer prevention.

## INTERVENTIONS

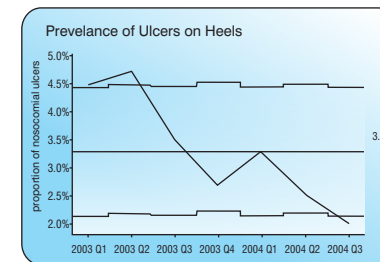
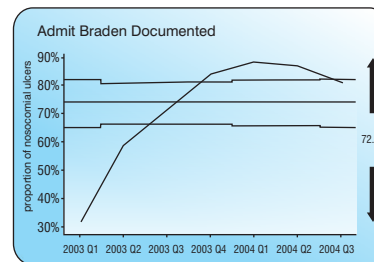
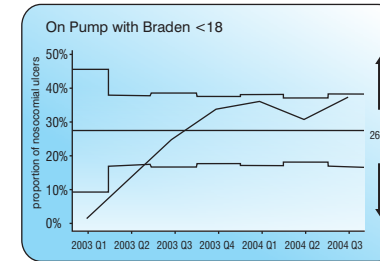
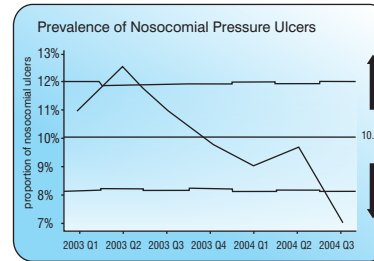
- Convert all applicable beds to a high density foam mattress which can be converted to an alternating air mattress with a pump. (AccuMax Quantum Convertible Mattress by BG North America). Beds not converted include critical care, bariatric, pediatric, maternal/child, psych and specialty beds.
- Use the pump for all patients with a Braden score of less than 18.
- Replace all OR table pads and gurney pads with a pressure relieving surface.

## METHODOLOGY

In 2003, baseline prevalence and incidence studies were performed. The surveyors across the Sutter facilities were taught identification and staging of pressure ulcers.

Each facility conducted the study in one day. All pressure ulcers not documented on admission were considered nosocomial. A limitation of the study is that pressure ulcers not documented on admission are considered hospital acquired. These may represent a failure to document and not true nosocomial pressure ulcers (Whittington, Patrick & Roberts, 2000). Study subjects were defined as all adult inpatients excluding pediatrics, maternity, psych, or very low risk units.

Quarterly prevalence and incidence studies were done in 2003 and 2004 and are continuing in 2005. Twenty two Sutter facilities, ranging from small rural community hospitals to large urban centres as well as several skilled nursing facilities participated in the study.



## RESULTS

The baseline prevalence system wide rate was 11.0%. 235 patients had nosocomial pressure ulcers of 2,138 patients examined. In the third quarter of 2004, the rate was 7.1%, or 162 patients with nosocomial pressure ulcers out of 2,288 patients examined. This represents a statistically significant decrease in nosocomial pressure ulcers. The reduction in the incidence of heel ulcers was also significant decreasing from 4.5% to 2.0%. Documentation of the Braden on admission has also improved significantly. Although there has been

improved utilisation of the pumps for patients with a Braden score of <18 it has not been statistically significant. The underutilisation of the pumps may be related to unavailability of the pumps and inconsistency in protocols regarding pump utilization. The conversion to the AccuMax mattresses was cost effective and saved Sutter Health approximately 2 million dollars in rental bed costs.

## DISCUSSION

The location of the majority of pressure ulcer in our population occurred in the sacral, heel and buttocks area. There has been no improvement in the critical care units with an initial rate of 15.2% and an ending rate 15.0%. This may be due to the delay in converting many of the beds in the critical care units to be an alternating air mattress or the use of a different type of pressure relieving mattress in the critical care units. Having identified this as an opportunity for improvement, several sites are collaborating on a focus CCU study.

## CONCLUSION

Although there are many studies on the subject of pressure ulcers very few studies are able to describe interventions that decrease the incidence or prevalence of pressure ulcers. Sutter Health was able to successfully standardise risk identification and prevention methods across multiple health care settings. Not only did this patient safety initiative decrease nosocomial pressure ulcers, but also it did so in a cost effective way.



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Disclaimer: The forgoing clinical study was conducted using the AccuMax Quantum Convertible. While the AccuMax Quantum Convertible and other AccuMax mattresses, such as the AccuMax JPN, the AccuMax Quantum PC II, etc., are intended to be used for the same purposes and are of only somewhat different construction, there can be no guarantee that the same results can or will be achieved as those indicated by the study since hospital conditions and patients will always vary.