# Reduction of the Incidence of Hospital-Acquired Pressure Ulcers in a Medium-Sized Not-for-Profit Hospital



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## **About the Organization**

- Medium-sized, not-for-profit hospital
- Client of Juran Health Care



## The Project Team

- Lean Six Sigma Black Belt (leader)
- Chief nursing officer (champion)
- Nursing leaders
- Other hospital staff



#### The Problem

- Pressure ulcers are lesions created by unrelieved pressure on the body. Occurrences most often transpire when a patient is bedridden for an elongated amount of time.
- A medium-sized, not-for-profit hospital had hospital-acquired ulcers developing at an 18% incidence rate.
- Compared to the national benchmark of 7%, the amount of pressure ulcers occurring at this level was costly and unacceptable.

### **Project Goals**

- Reduce incidence rate of hospital-acquired pressure ulcers from the current rate of 18% to 5%, two percentage points below the national average.
- Achieve 5% goal by October 15, 2008, based on a project start date in July 2007.



# **Root Cause Analysis**

- 1. Development of a hospital-acquired pressure ulcer in a patient is dependent on Braden score being done on admission (within eight hours).
- 2. Nurses do not have easy access to appropriate knowledge and intervention information regarding pressure ulcers.
- 3. Not enough additional pillows (at least five total per patient) available in at-risk patient rooms for proper positioning.

# **Root Cause Analysis**

- 4. Skin care products not available on the atrisk patient unit.
- 5. Development of a hospital-acquired pressure ulcer is dependent on hours of care. (Number of hours on unit that nurse and tech have hands on, number of staff x shift / number of patients.)
- Development of a hospital-acquired pressure ulcer is dependent on documentation of nursing skin care plan.

# **Addressing Root Causes**

#### Measures taken to decrease pressure ulcers:

- Assessment of skin within eight hours of admittance and every shift of stay going forward.
- Documentation of Braden Scores and implementation of visual identifiers for at-risk patients (scores of 18 or below). Creation of Braden Quick Reference clipboards for nurses.
- Chair waffles for patients who are chair-bound or who require assistance from bed to chair. Patients cannot be in chair for more than one hour.

# **Addressing Root Causes**

# Measures taken to decrease pressure ulcers (continued):

- Five pillows stocked in every room, used for repositioning.
- No diapers for patients.
- Hospital-wide purchase of new mattresses with pressure redistribution technology.
- Wound care order geared towards pressure ulcer prevention and treatment.
- E-mail and wound care hotline for nurses dedicated to at-risk patients.



#### **Return on Investment**

- A staggering 13.1% of incidences were shaved in a mere 18 months.
- By the conclusion of the project, the incidence rate had dropped to 2.1 percentage points below the national average.

Time Frame	Incidence Rate
Quarter 3, 2007 (project launch)	18%
Quarter 1, 2008	16.4%
Quarter 3, 2008	10.4%
Quarter 4, 2008	8.3%
Project conclusion	4.9%



#### Return on Investment

- The costs for the hospital before the project began were \$2,357,208 annually.
- A 72% reduction in costs saved the hospital \$1,852,162 per year.
- This process drastically decreased the annual operating costs of the hospital and increased client comfort and health.

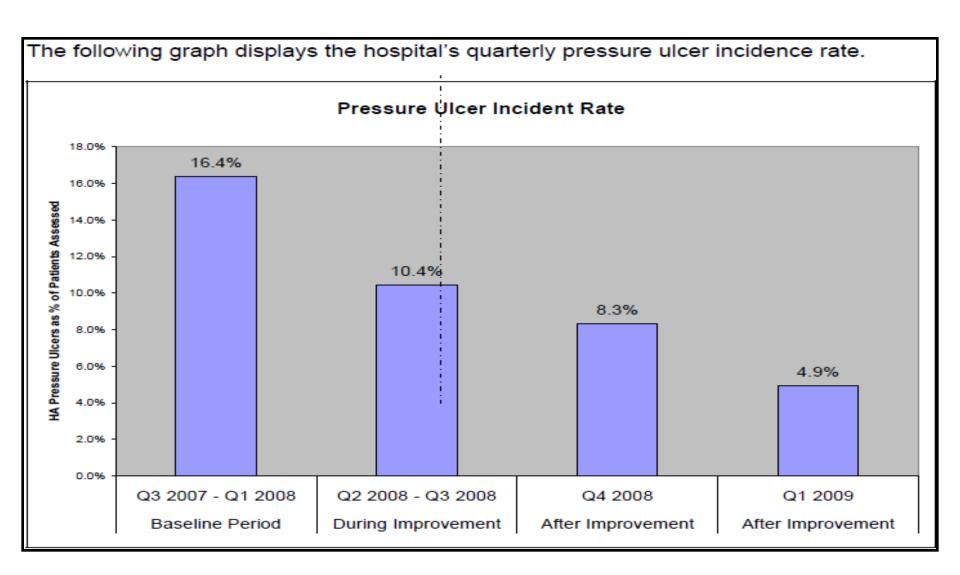


# **Monitoring and Evaluating Over Time**

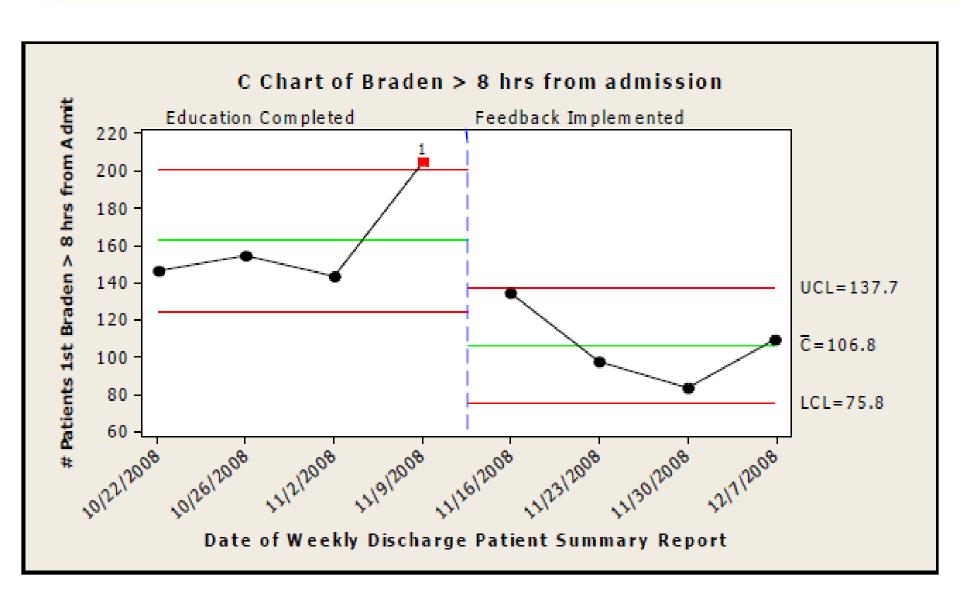
- The team implemented a control plan, a communications plan, a training plan, and new and revised policies and procedures.
- After the process was fully implemented and in place several months, the target incident rate of 5% and a sigma level of 3.2 had been achieved.
- The second quarterly incidence study following the project revealed only four cases out of 81 patients.
- In January 2009, an incidence study showed an incidence rate of 4.9%.



#### **Pressure Ulcer Incident Rate**



# **Braden Scores Done Upon Admission**



#### For More Information

- Learn more about the Juran Institute and Juran Health Care: <a href="www.juran.com">www.juran.com</a>.
- More case study presentations are available from the ASQ Healthcare Division: www.asq.org/health/quality-information/library.
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