Applying Smart Pump Data to Improve Safety at the Bedside
Integrating New Technologies that Support Quality Improvement

**Objective 1:** Apply smart pump data to promote compliance with administration of infusions using drug library guardrails.

**Objective 2:** Optimize the pump’s drug library to decrease alert fatigue through application of top drug alert data.

**Safety Implications at the Bedside**

Principles of Human Performance – Humans are Fallible*
- Normal conditions, humans make ~5 – 7 errors/hour
- Stressful/emergency conditions, humans make ~11 – 15 errors/hour

*S 2009 Department of Energy (DOE) Center for Human Performance report

Smart pumps prevent human errors from reaching the patient. When smart pumps are utilized to the fullest extent of the technology design, they can significantly improve safety at the bedside. A simplified approach to application of pump data by nursing staff raises awareness to support use and reduce risk.

**Quarter III 2012**
- Total Alaris® devices = 2,309
- Total facilities = 18
- Total harm averted = 808 incidences
- Total severe harm averted = 211 incidences
- Severe harm health care intervention cost avoidance = $2,198,831

**University Hospitals Patient Safety Initiative 2012**
Identifies practice issues, dangerous trends and drug library modifications

**Monthly process**
- **Step 1** – Review dashboards and data, #1 drug alert, by nursing division
- **Step 2** – Engage nursing staff; using the “UH Drug Alert User Guide”
- **Step 3** – Submit feedback; Alaris email or Alaris intranet communication form
- **Step 4** – Audit; monitor compliance

**Tools our hospital has developed to assist nursing with understanding its data**
- **Drug Alert User Guide** – to prompt discussion with staff about what is causing the drug alerts to fire
- **Feedback submissions** – Alaris email and intranet communication forms
- **Intranet Resources** – Online interactive pump education, drug library guardrail settings, tip sheets

**Measures of Success:** Improved compliance with use of the drug library. Decreased number of drug alerts. Increased number of harm avoidance cases.