Improvement Path Systems

CASE STUDY

Leveraging Technology and Process to Reduce Hospital Acquired Infections 2017

Project Objective & Background

Our HAI solutions were specifically engineered to reduce this variation while establishing a standardized, more efficient system for providing your Infection Control department with the data for HAI surveillance. In addition to aiding staff in identifying HAIs, our solution provides valuable information for monitoring trends, allowing for greater collaboration and evidence-based action within the inpatient units. We worked closely with staff to automate generation of the National Healthcare Safety Network report form and "roll-up" units into designated categories such as "critical care units".

There was an urgent need to develop a robust decision-support solution with considerations such as Antibiogram reports and proactive identification of infection candidates. Catheter-associated urinary tract infection and ventilator-associated event components have been developed for the system to capture, monitor, detect time-sensitive data points for the prevention of these types of infections.

Challenges

In 2015, our pilot facility's reporting process for healthcare-associated infections (HAIs) was heavily reliant on manual data collection and comparisons between multiple sources. This process was time consuming; variation in practices concerning the methodology for collecting patient days, patient line days, and identifying infections provide ample room for error.

We were faced with a variety of challenges that included:

- Manual counts that were inaccurate, obscuring true infection rates,
- Excessive nurses and staffers to pinpoint and track individual level charting errors.
- Aggregating data from multiple source systems was resources intensive.
- An administrative track training, intervention, and related-outcomes without knowing the extent of my hospital's issues.

Effective harms reduction plans begin with early identification. Overall, we realized that manual entry activities are a clear burden on clinicians and, at times, results in inaccurate reporting.

We fully understood that the key to more success was to emphasize the critical value of placing your clinicians at the patient's side.

Goals

IPS was determined to develop a state-of-the-art HAI decision-support service tool engineered to reduce HAIs. Furthermore, we sought to achieve the following:

- Improve availability of quality data.
- Reduce time to produce monthly CDC reports for HAIs.
- Efficiency created by using the tool will create opportunities for infection control to focus on staff training, infection prevention, and other non-administrative tasks.
- Provide a standardized solution for hospitals to manage and monitor HAIs.

Our Solution

Implementation

IPS developed best-practices and software solutions to automate counts for patient days, device days, and infection rates-- streamlining required reports to the National Healthcare Safety Network. After a five-month study funded by the Department of Defense, our team determined that manual patient and device counts are generally 6% lower than the true count--artificially increasing the infection rate. Our system's counts varied by only 1%. IPS implemented automated reports to identify examples of common charting errors. Our solution creates a data-repository that standardizes and merges various source systems, creating a complete record of patient data. This record system enables outcome analysis and predictive analytics.

Our HAI solution was specifically designed to reduce time to produce monthly CDC reports for HAIs.

- Automate calculation of denominators.
- Manage clinical surveillance workflow.
- Meet all the requirements of CLABSI Surveillance per the CDC definition.
- Document CLABSI events in an auditable system separate from the EMR.

A key feature was to provide staff with accurate historical monthly reports that they could act on; through insights on infection rates, denominators, and events.

Process Improvements

IPS realized that effective harms reduction programs begin with early identification. Manual entry is a burden on clinicians and, at times, results in inaccurate reporting. Standardized processes and automated solutions are both easier and more effective.

In this regard, Improvement Path Systems provided staff with an unbiased, reliable means of tracking patient outcomes related to HAIs. Our solution provided insight into the effects of policy change, training, and Infection Control measures.

As a result of implementing the IPS HAI Solution, our pilot hospital network is better positioned to manage its overall patient safety system. By successfully implementing and partnering with IPS; redesigning work flows, policies, procedures, and controls; and reinforcing through performance standards, these hospitals have taken the necessary steps to improve the detection of potential hospital acquired infections produce better health outcomes.

Effects

After an auditing pilot-site data, it was determined that the manual surveillance process only identified 63% of HAIs. Why does this matter? 37% of HAIs were never identified--and training could not be directed to prevent future harms.