



## Context

- Best Care Always! (BCA), is an initiative aimed at improving patient safety and spreading improvement methods in all South African hospitals; over 200 hospitals are enrolled.
- Current focus is reduction of healthcare-associated infection through implementation of 4 infection prevention bundles plus antibiotic stewardship.
- At Groote Schuur Hospital doctors collect line and infection data for each patient during daily ICU ward rounds to track central line-associated bloodstream infection (CLABSI) rates.

## Problem

- Staff were confident the act of collecting data had increased awareness of CLABSI, and even reduced infection rates, yet 6 months after data collection had began, the data was still not being used to track outcomes.
- An attempt to collate the data on an Excel spreadsheet failed. Entering data on a named-patient basis (e.g. hospital number, type and site of line, date of insertion and removal, whether or not an infection had occurred) was time consuming and missing data was soon detected.
  - A line would be recorded on one day, and reappear days later, with no information as to whether it had been removed or remained.
  - There was no data for days, weekends, even weeks at a time.
  - Positive blood cultures were recorded, but there was no indication of whether an infection had been diagnosed..
- It was not clear how the data could be used to track CLABSI outcomes for the ICU.

## Assessment of Problem and Analysis of Causes

- Staff in this teaching hospital, who were accustomed to research-orientated data, were focused on detailed patient-level data which was not helpful for quality improvement. The conceptual shift towards routine, user-friendly measures to track progress at the frontline of care was challenging to them.

## Lessons Learned

- Clinicians with a data mind-set for 'research' needed support in shifting to a data for 'improvement' mindset.
- Adding a third colour to the WSC denoting incomplete data, may have prompted improvement in data quality.

## Message for Others

- A research mindset focused on detailed patient level data creates barriers to improvement.

## Intervention:

- The Welsh Safety Calendar (WSC) was recommended as a data tool to demonstrate the power of simple, easy to collect, visually displayed, routine data.
- The WSC is a monthly calendar displaying days of the month in the shape of a cross. Calendar-days are coloured red or green, according to whether or not an infection is diagnosed that day.
- Progress is tracked by observing the number of 'red' days over time, as calendars are completed month by month, (the underlying assumption being that the denominator [e.g. number of central line-days in the ICU], remains relatively stable over time).

## Strategy for Change:

- Days with and without infection were coloured red and green respectively. A third colour, purple, was added for days with missing or incomplete data.
- Calendars were compared to assess progress. Data errors were shown to have become increasingly frequent over time (Figure 1).

## Study Design:

- The Excel spreadsheet was abandoned.
- All 6 months of existing data on CLABSI were entered on WSCs.



Figure 2: Welsh Safety Calendar with annotations (line-days; infections)

## Effects of Changes

- WSCs were well received by the staff and managers, and were displayed in a glass cabinet at the entrance to the ICU.
- Problems with data were acknowledged.
- The Calendars were discussed at a Morbidity and Mortality meeting. Doctors who had been collecting the data, felt the display of data on the WSC gave value to their data collection efforts.
- Nurses and ICU doctors worked together the following month to complete their own WSC which showed a marked improvement in data quality.
- Although doctors continued to use the notebooks to collect detailed individual patient data, a new daily tally sheet was introduced to collate central line-days and infections from the notebooks, to enable the unit to begin calculating a CLABSI rate per 1000 line days.

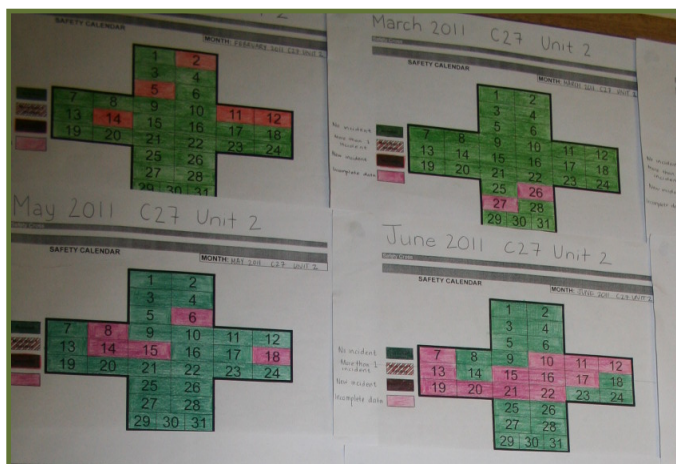


Figure 1: An additional colour (purple) was added to the Welsh Safety Calendar to denote incomplete data