

# MAKING STRIDES IN IMPROVING HAND HYGIENE COMPLIANCE AND REDUCING HEALTHCARE-ASSOCIATED INFECTIONS

Rikie Willemse (1), Louise Zeelie (1), Briëtte du Toit (2)

1. Mediclinic Bloemfontein 2. Mediclinic Southern Africa

## 1. CONTEXT

Hand hygiene is a core element in the prevention of healthcare-associated infections (HAIs) and the spread of multidrug-resistant organisms. Mediclinic Bloemfontein, a 383-bed private hospital in Free State, South Africa (with 72 critical care beds), participated in its first formal hand hygiene campaign in June/July 2012 as part of the World Health Organisation's global annual campaign<sup>1</sup> SAVE LIVES: Clean Your Hands.

The aim was to improve hand hygiene compliance to >80% within one month and hence reduce the occurrence of outbreaks and HAIs.

A compliance audit was conducted in July 2012 using the Institute of Healthcare Improvement (IHI) audit tool<sup>2</sup>. Observational audits evaluated the real-time hand hygiene practices of healthcare and non-healthcare workers.

## 2. PROBLEM

The audit showed very low overall hand hygiene compliance of 25% of total opportunities. The neuro-trauma critical care unit (CCU) continued to experience outbreaks of carbapenem resistant *Acinetobacter baumannii* despite numerous infection prevention and quality improvement actions.

## 3. ASSESSMENT OF PROBLEM AND ANALYSIS OF ITS CAUSES

Minimal planning had been done before the first hand hygiene campaign. Doctors and non-nursing services were not engaged in the campaign and the five moments of hand hygiene were not focussed on because it was assumed that personnel were familiar with them and that having posters visible in the tea rooms was an adequate reminder.

## 4. INTERVENTION

A quality improvement team was formed to focus on a "fresh new" hand hygiene campaign based on a multi-modal strategy in November 2012. Improving hand hygiene compliance was a priority.

The poor compliance results of the first audit were used to get buy-in from all cadres of staff, including doctors. The nursing manager drove the campaign. Unit managers were actively involved.

DVD presentations visually illustrated the importance of handrub and the spread of organisms via contaminated hands. A culture of peer-to-peer reminders was initiated.

Handrub was made available at all entrances of each nursing department. Additional handrub dispensers were placed near points of care.

Red lines on floors demarcated hand hygiene focus areas.

The infection prevention and control department, clinical facilitators, unit managers and senior nurses were all involved in the compliance audits.

## 5. STUDY DESIGN

A prospective, observational, interventional study

## 6. STRATEGY FOR CHANGE

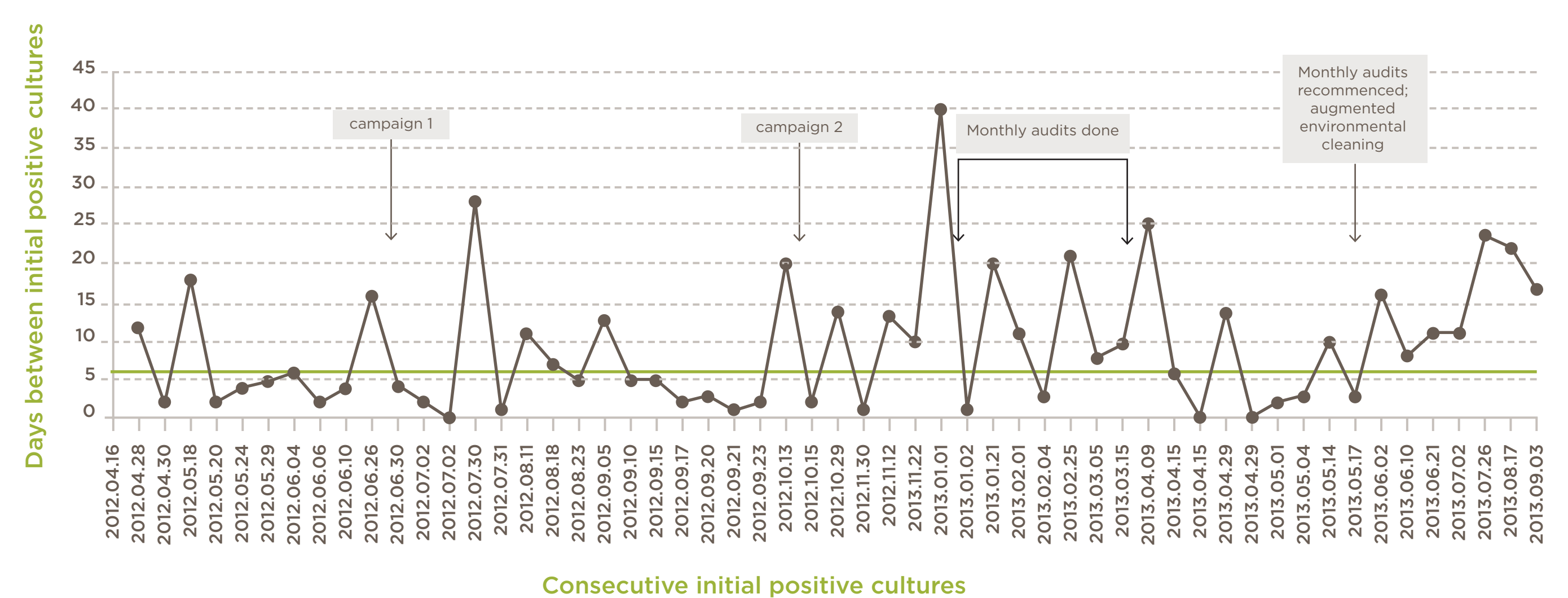
Senior registered nurses in each department were expected to assess at least 30 hand hygiene opportunities each week for four weeks. Real-time feedback on compliance was provided. Data findings were discussed weekly at nursing management and doctors' meetings. Departments that conducted the most audits received prizes.

## 7. MEASUREMENT OF IMPROVEMENT STRATEGY

Weekly compliance of hand hygiene was monitored for the month of the campaign. A line graph of the days between carbapenem resistant *Acinetobacter baumannii* positive cultures (figure 1) was used to assess the impact of the intervention over time.

### DAYS BETWEEN INITIAL POSITIVE CULTURES FOR ACINETOBACTER BAUMANNII MEDICLINIC BLOEMFONTEIN, NEURO-TRAUMA CRITICAL CARE UNIT APRIL 2012 - AUGUST 2013

Figure 1



## 8. EFFECTS OF CHANGES

The target of >80% compliance was almost reached by the end of the month-long campaign. A temporary increase in days between *Acinetobacter baumannii* infections appeared to correspond with each of the two hand hygiene campaigns but there was no statistically significant reduction in HAIs (indicated by an increase in days between infections) until the last six data points (shift in the system when applying Run Chart rules<sup>3</sup>). However, this shift corresponds with a separate, new intervention - the addition of another cleaner for the day and night shift in this unit.

## 9. LESSONS LEARNT

Knowledge and training alone are not sufficient to improve hand hygiene compliance. A multi-modal strategy is required. Hand hygiene compliance should be measured daily, and not only during six-monthly campaigns, to ensure a sustainable reduction in infections with problematic organisms such as *Acinetobacter baumannii*.

## 10. MESSAGE FOR OTHERS

A way of sustaining the gains is needed once improvements are made through a short-term campaign. Additional interventions may be needed to reduce HAIs.

1. World Health Organisation's global annual campaign SAVE LIVES: Clean your hands - [www.who.gpsc/5may](http://www.who.gpsc/5may)  
 2. How-to-Guide: Improving Hand hygiene. A Guide for Improving Practices among Health Care Workers - Institute of Healthcare Improvement, <http://www.IHI.org>  
 3. R. J. Perla, L. P. Provost and S. K. Murray. The run chart: a simple analytical tool variation for learning from variation in healthcare processes BMJ Qual Saf 2011 20: 46-51. Downloaded from [qualitysafety.bmj.com](http://qualitysafety.bmj.com) on January 31, 2011.