Background & Objectives

Many chronic-care facilities and nursing homes have endemic rates of methicillin-resistant Staphylococcus aureus (MRSA) colonization and/or infection. The colonization of patients with MRSA presents a major challenge to infection prevention and control efforts in Canada.

Baycrest Geriatric Health Care System is an academic health sciences center in Toronto, Ontario, Canada. Baycrest provides a unique continuum of care, ranging from residential housing and outpatient clinics to a 472-bed nursing home and a 300-bed continuing-care hospital. Within the Baycrest campus, the 27-bed acute care and transition unit (ACT) provides an alternative to acute-care hospitalization for older adults (>65 years of age) with complex and chronic illnesses (Figure 1). The rate of Baycrest-acquired MRSA was considerably higher on the Acute Care and Transition (ACT) unit, where 21% of all nosocomial cases were acquired.

We previously reported an interrupted time-series design where daily bathing with disposable 2% chlorhexidine gluconate (CHG) cloths reduced MRSA incidence in the ACT unit from 4.99 to 0.56 per 1000 patient-days (Candon et al.).

Daily CHG bathing was then continued as a standard of care over an extended period of time and we report on the long-term sustainability of this intervention.

Methods

Patients on the study unit had an average age of 87 years, with all patients being >65 years. Pre-intervention and post-intervention demographic data was analyzed and compared. All patients were bathed daily with disposable 2% CHG cloths (Sage Products Inc., Cary, Illinois); all other bathing products were removed from the unit. We continued to monitor MRSA transmission over a 33-month period on the ACT unit. To assess MRSA transmission, swabs were collected within 48 hours of admission, and on discharge. MRSA-positive patients were placed on contact precautions.

The main outcome measure was the number of ACT-acquired MRSA cases post-intervention. We considered p values <0.05 to be statistically significant.

MRSA acquisition rates during the two study periods were compared using a chi-square test. The t test was used to compare demographic data pre- and post-intervention (Table 1).

Results

Time periods for comparison were six months pre-intervention, followed by a one-month washout when staff received training, and 33-months post-intervention. Swab-collection compliance was 95% for both pre- and post-intervention. We found continuing the practice of daily CHG bathing as a standard of care sustained the reduced incidence of MRSA (Figure 2); although, rates of transmission increased from the initial 6-month study (0.56 to 0.88, per 1000 patient days) this still represented an 82% overall reduction in incidence over a 33-month period (p<0.001, chi-square analysis).

Conclusions

Few studies have been conducted investigating sustainable control measures to prevent MRSA transmission among elderly residents in chronic care facilities or nursing home settings. To our knowledge, this is the first extended study highlighting the utility of daily CHG bathing, as a standard of care in a geriatric setting, resulting in a sustained significant decrease in MRSA incidence.