

An audit involving an awards scheme, MRSA screening and staff education reduced healthcare-associated infections among care home residents

Tackling infection in care homes

In this article...

- Taking a multifaceted approach to infection control
- The effect of audit, screening and staff education on MRSA
- Advice on replicating this model of infection control

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Care home residents have a higher risk of contracting a healthcare-associated infection than the general population.

This article describes a three-dimensional strategy that reduced MRSA colonisation among this group. This project won a Nursing Times/Health Service Journal Patient Safety Award in the primary care category in 2011.

Introduction

Preventing healthcare-associated infections (HCAI) is a priority in delivering clean, safe care to patients.

Wolverhampton City PCT has taken a care economy approach to infection prevention and control, working with the local acute hospital, local authority, independent contractors and care homes to deliver a joined-up vision to prevent HCAs and improve patient safety. This strategy has enabled us to take a city-wide approach by working with partners and stakeholders.

The vision was devised and approved via a care economy committee and developed, planned, delivered and evaluated by nurses in the community infection prevention and control team (CIPCT).

The Wolverhampton model, entitled PREVENT, incorporates an audit, a “seek and destroy” MRSA screening programme, and education and training for care home staff across the city (Fig 1).

Background

HCAIs cause unnecessary pain and suffering for patients and are costly to treat.

In 2008, the Wolverhampton care economy committee recognised that care homes were a potential source of infection and that support would be needed to reduce the risk of acquiring an HCAI while living or working in these settings.

In colonisation, a microbe establishes itself on part of the body but does not produce an active infection. Coia et al (2006) identified that patients at high risk of MRSA colonisation include those living in residential care who have a known or likely high prevalence of MRSA carriage. Locally, MRSA carriage in care home residents was unknown but data collected after admission to the local acute trust indicated that a disproportionately high percentage of MRSA colonisation identified on admission occurred in care home residents.

Staphylococcus aureus is part of the skin's normal flora, especially in the axilla, groin, perineum and nose. Some people are heavily colonised with *S aureus* and areas of damaged skin are especially prone to colonisation. MRSA may replace sensitive strains of *S aureus* on the skin, which it will colonise to provide a reservoir from which it may spread to other patients and staff.

The project

We felt a three-pronged approach was the best way to achieve the desired outcomes, as MRSA screening alone may not reduce colonisation (Fraise et al, 1997). The CIPCT launched the PREVENT initiative, consisting of audit, a surveillance programme for care homes and staff education and training, in January 2008 (Fig 1).

Audit

To encourage compliance and commitment to improving clinical practice and the environment in which nursing and residential social care are delivered, the PREVENT charter was instigated in 2008 (Box 1).

Managers and staff were asked to sign a pledge of commitment to improve infection prevention standards year on year.

The charter aims to recognise their efforts by awarding a certificate of achievement, ranging from an 80% standard of compliance for bronze to silver and gold certificates for higher achievers (Table 1).

Initially, the audit tool was devised using guidance from the Infection Control Nurses Association (2005) and the Department of Health (2006). It has since been strengthened to include aspects of the Health and Social Care Act (DH, 2008, revised 2010).

Developing and using an infection control audit tool should ensure that appropriate policies and standards are in place in care homes and that these standards continue to be met (Tunney et al, 2006).

Staff ownership of infection prevention and control is crucial; care home managers are encouraged to embrace the advice and recommendations given at their annual audit, and the PCT chief executive presents compliance certificates at an annual awards ceremony. This shows the PCT's “board to ward” approach (DH, 2007), and is an excellent opportunity to showcase best practice and highlight the year's successes.

5 key points

- 1** Patients colonised with MRSA have an increased risk of developing serious infection
- 2** MRSA screening alone may not reduce colonisation
- 3** Staff ownership of infection prevention and control strategies is crucial
- 4** Practitioners' knowledge and formal training is vital in preventing the spread of HCAs
- 5** Nurses wishing to replicate this model need a clear vision, board level support, effective leadership, supportive management and funding

FIG 1. PREVENT - THE WOLVERHAMPTON MODEL



FIG 2. MRSA POSITIVE AND COLONISED RESIDENTS

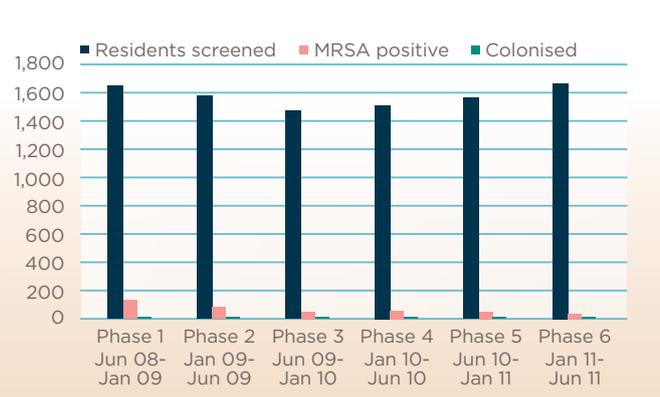


Table 1. Scoring for awards scheme

Bronze	80-87%
Silver	88-94%
Gold	>95%

Table 2. Audit results

	2008-09	2009-10	2010-11
Homes audited	77	73	77
Bronze awards	19	20	11
Silver awards	11	28	32
Gold awards	2	20	31
Total awards presented	32	68	74

Audit results

In the past three years, the number of awards presented to care homes has increased, with 74 out of 79 homes in the borough now meeting the minimum standard of 80% compliance, achieving at least a bronze award (Table 2).

Environmental standards have improved dramatically since the project started, along with noticeable improvements in staff attitudes. This is demonstrated by the increase in silver and gold awards.

During 2010-11, the Wolverhampton borough had 79 care homes; 77 were audited and two declined to participate; however, this did not cause concern as both are small learning disability units that are classified locally as low risk. One took part in the 2011-12 audit and received a silver award. The other will be invited to participate in PREVENT in 2012-13.

The implications of declining to take part are explained to managers; they receive neither an action plan for progression towards best practice nor a portfolio

Over the past three years, the number of awards presented to care homes has increased, and most meet the minimum standard of 80% compliance

of information to support their Care Quality Commission registration process.

A change in manager/owner can tip the balance from a successfully run home with excellent infection prevention awareness and compliance to one that does not meet the required standards.

Three homes did not achieve at least the minimum of 80% (bronze) during the 2010-11 audit. Although this was disappointing, remedial action was taken immediately via an action plan and an improvement letter from the PCT's director of infection prevention and control.

Furthermore, liaison with the CQC by the CICPT is standard practice for a home about which there are concerns. If patient safety concerns are noted during the audit, the commissioner at the PCT is contacted about action. Homes are supported to make improvements and an infection prevention nurse carries out further support visits to monitor progress.

MRSA screening

All care home residents are offered six-monthly MRSA screening as part of the

PREVENT initiative. Swabs are obtained from the nose, axilla and groin to analyse for colonisation. Any resident found to be colonised is offered a course of decolonisation treatment, which is funded by the PCT and delivered using a patient group directive. GPs are not asked to prescribe unless the patient is unsuitable for standard treatment or the strain of MRSA is resistant to the standard treatment.

At the start of this project, the MRSA colonisation rate was 9%; three years later, this has dropped to below 3%; this may be as low as we may be able to achieve using existing methods. The risk of acquiring an MRSA bacteraemia has reduced significantly (by 67%) since the start. Fig 2 shows the numbers of residents screened every six months, those who were MRSA positive and those who were colonised.

As part of a wider MRSA screening strategy across the city, this "seek-and-destroy" risk-reduction programme has seen MRSA bacteraemia rates reduce city-wide to just two cases during 2010-11, compared with 82 in 2005-06. Neither of the two cases were in care home residents.

Education and training

It is widely accepted that staff knowledge and formal training and experience in infection prevention and control plays a crucial role in preventing the spread of HCAs. Koch et al (2009) argued that implementing an infection control programme incorporating staff education is vital in reducing the number of infections in nursing homes.

Wilson (2003) recognised that, although

BOX 1. INFECTION PREVENTION CHARTER

- P** Promote best practice through a nominated infection prevention champion
- R** Regularly monitor for compliance of the required standards and take remedial action as appropriate
- E** Ensure high standards of hand hygiene awareness and compliance
- V** Visible compliance with dress code standards
- E** Ensure high standards of environmental cleanliness and an annual deep clean and declutter
- N** Never accept poor standards and practice, and implement best-practice guidance in local practice
- T** Take action and protect patients and the public

Source: Wolverhampton City PCT

MRSA can be spread by patient-to-patient and airborne transmission, it is usually transferred via the hands of healthcare workers. It is therefore important that staff are updated annually on standard infection control measures and that hand hygiene remains a high priority.

Education and training for care home staff was recognised locally as a priority as there is generally a high turnover of employees. Although infection prevention and control training is mandatory, it tends to be during induction using a "train the trainer" approach and the trainer's knowledge cannot be guaranteed.

The PCT recognised this approach was haphazard and provided funding to produce a training DVD covering every aspect of basic infection prevention principles that can be applied to different work environments. Given the rapid staff turnover in care homes, the 30-minute DVD offers an introduction to the topic in a format that can be easily absorbed. New staff can watch it as part of their induction programme.

The DVD was supplied free of charge to every care home in the Wolverhampton area, including independent, local authority and PCT-commissioned services. Care home managers were asked to return a training log, so access to training could be monitored and reported on. A resource folder was also produced and provided free of charge to each care home, as a source of basic information that may help to answer any queries.

DH (2006) guidance recommends that each care home should appoint a staff member with specific responsibility for infection control. Homes are encouraged to nominate infection prevention champions and, to support this, the CIPCT devised a care home link practitioner group in April 2010. This holds quarterly meetings that act as a forum for sharing best practice.

Nationally, care homes generally do not receive the kind of support that Wolverhampton City PCT provides. As they are independent organisations, the NHS has no statutory obligation to offer this level of input. Tunney et al (2006) highlighted that only 23% of care homes in Northern Ireland had ever received a visit from community infection control nurses.

Main outcomes

Randle and Bellamy (2011) acknowledged Wolverhampton City PCT as being the first in the UK to work with staff in residential and nursing homes to improve infection control standards and reduce MRSA cases.

PREVENT has resulted in measurable

improvements in environmental standards, clinical practice and awareness of infection prevention, and has reduced MRSA colonisation rates by more than 50% in this care home residents.

It has achieved the following so far:

- » MRSA colonisation rates in care home residents reduced from 9% to below 3%;
- » No MRSA bacteraemia recorded in a care home resident since May 2008;
- » A significant reduction in cases of *C difficile*;
- » Improved practices – piloting a dehydration clinical care pathway in care homes during outbreaks of diarrhoea and vomiting;
- » Improved management of diarrhoea and vomiting outbreaks;
- » Effective working relationships;
- » Sustainable, measurable improvements;
- » Nursing Times/Health Service Journal Patient Safety Award 2011 – winner of the patient safety in primary care category.

A pilot of MRSA screening on admission to care homes began in October 2011. Since then, 343 screens have been taken, just one of which (0.3%) identified MRSA colonisation. A statistician has said that we have reached the sample size required to have statistical significance, although it is recognised that it is still a small sample size.

The 2011-12 care home audit tool has been strengthened, using the Health and Social Care Act (2008) as its evidence base. This will allow a platinum award to be given should homes achieve 98% compliance or above. Homes that received a gold award in previous years had commented that they aspired to do better and this positive feedback enabled the CIPCT to review the project and strengthen the tool.

Replicating PREVENT

Infection control nurses wishing to replicate the Wolverhampton model in their area need a clear vision, board-level support, effective leadership, supportive management and funding. They also need to communicate the vision to stakeholders, engage care home staff, and have good operational support including a robust project plan that can be measured.

Knowledge of change management in theory and practice is essential. Marquis and Huston (2009) recognised that for staff to be receptive to change and for it to be effective, it must be systematic and planned. To encourage the effectiveness and success of the PREVENT model, the CIPCT used Lewin's (1951) model of change to support implementation.

Conclusion

Delivering a structured programme of audit, MRSA screening and education for care home staff across Wolverhampton reduced HCAs in these settings.

Communication was pivotal to the project's success, and infection prevention nurses regularly liaised with care home staff and other stakeholders by telephone and letter and by carrying out visits.

The Nursing Times/Health Service Journal Patient Safety Award 2011 is the reward for all those who shared the vision: patients, directors, managers, GPs and the infection prevention and care home teams.

We feel that the work in Wolverhampton demonstrates innovation and vision and has shown what can be done when teamwork is fully implemented. **NT**

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 This project won a Nursing Times/Health Service Journal Patient Safety Award in 2011. To enter the 2012 awards, go to: www.patientsafetyawards.com; closing date for entries is 23 March