

# Successfully reducing year-on-year diarrhoea and vomiting outbreaks in a national Care Home group

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## Introduction

Within the UK, gastrointestinal infections, which include *Clostridium difficile* and diarrhoea and vomiting (D&V) outbreaks associated with norovirus, account for approximately 9% of all HCAI<sup>1</sup>. Gastrointestinal infections, like all HCAI, are distressing for residents and their families and in the most vulnerable residents they can have far reaching health consequences and even result in death. In addition, during outbreaks there is a serious risk of infection to employees.

Environmental surfaces within healthcare settings play an important role in microbial transmission<sup>2</sup> and cleaner healthcare environments reduce the risk of infection and cross infection for healthcare providers and users. A key complication of D&V outbreaks is how to minimise the number of microbes within the care environment (environmental bioburden) when infected residents are continually seeding the area with billions of microbes every time they vomit or defecate.

Irrespective of geographical location and care setting (primary vs. secondary) it is clear that infections acquired within any healthcare setting place a significant strain on the care facility and ultimately result in an additional – and often avoidable – financial impact on the healthcare provider. The financial ramifications for the provider are typically associated with labour costs – increased housekeeping hours, more staff sick pay and backfill pay sometimes at a premium if outsourced to agencies and the scale of these costs will generally depend upon; 1) frequency, i.e. number of outbreaks; 2) severity, i.e. the number of people affected; 3) duration, i.e. how long the outbreak lasts.

Any initiatives targeted at reducing the frequency, severity and duration of an infection outbreak effectively reduce the risk of harm to both residents and team members. An important secondary benefit to improving outbreak management is the potential to reduce the additional financial burden incurred by healthcare providers when outbreaks occur.

The primary aim for Sunrise Senior Living and Gracewell Healthcare was to improve safeguarding for residents and staff by reducing the number, severity and duration of D&V outbreaks across their 46 UK communities. A secondary cost-benefit would be realised if the team could successfully reduce the frequency, magnitude and duration of D&V outbreaks across the group.

## Methods

In late 2014 Sunrise Senior Living implemented a new approach to outbreak prevention and management. The project was developed and implemented by the Senior Director of Care and Quality and it involved the following changes to existing practice;

1. Staff training and education around outbreak management
2. Staff communication and defining areas of responsibility
3. Rapid reporting, early intervention and proactive management of any suspected outbreak
4. Adopting and implementing a new approach to both routine cleaning and disinfection and a more targeted, intensive cleaning and disinfection process for any areas or locations where there was potential contamination of the care environment associated with an infection outbreak.

The new approach to cleaning and disinfection is the focus of this poster however, it is essential to highlight that all elements of the above outbreak prevention and management 'care bundle' are interlinked and therefore the optimal outcome will only be achieved by effectively combining these initiatives together into a joined-up programme.

Prior to implementing the new D&V outbreak prevention and management care bundle, the cleaning and disinfection at Sunrise Senior Living relied on a range of chemicals from several suppliers. Using numerous different chemicals for different types of cleaning added a level of additional complexity with regard to the volume of COSHH assessments, stock control / inventory and risk assessment training.

As part of this national project Sunrise Senior Living wanted to use a more effective disinfectant in order to reduce the frequency, severity and duration of D&V outbreaks by minimising the risk of microbial transmission from the environment by stopping the spread of microbes associated with the outbreak. To achieve this the disinfectant had to be safe, easy to use, non-corrosive, compatible with all surfaces as well as rapid and effective against a wide range of microbes.

The disinfectant identified and implemented into the care bundle was TECcare® CONTROL. The products adopted for both routine (daily) cleaning and for the outbreak prevention and management tool kit were the misting aerosol (250ml & 450ml), the 5 litre concentrate drum dosed into 750ml ready-for-use trigger spray bottles and the standard surface wipes and specialist medical device wipes (see Figure 1).



Figure 1. Product range used in the outbreak management tool kit

The range of TECcare CONTROL cleaning and disinfection products were adopted into practice for routine cleaning and as an integral part of the new approach to outbreak management. The routine use of the TECcare products helped create and maintain a safe environment for residents and staff.

When an outbreak did occur, these products were used at the earliest opportunity in order to contain the outbreak by minimising its spread and thereby reducing the risk of cross infection to residents, visitors and staff. In addition as soon as residents had stopped showing signs of infection the environments (rooms) where they were cared for were deep cleaned. The 'deep clean' process implemented during an outbreak used the TECcare CONTROL products to clean and disinfect the affected environment as follows;

- 750ml ready for use spray – for cleaning all hard surfaces
- Wipes – for cleaning all medical equipment and high touch surfaces
- 250ml and 450ml single use aerosol – for room fogging/misting

## Results

Since implementing the new outbreak management care bundle in 2014 there has been a 63% group wide reduction in the number of D&V outbreaks (from 40 in 2014 to 15 in 2016). This correlated to a 61% reduction in the number of days closed as a result of D&V outbreaks (from 330 in 2014 to 130 in 2016) (see Figure 2).

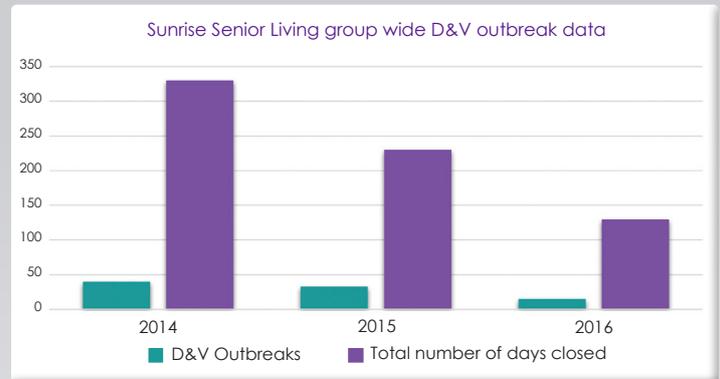


Figure 2. Graph showing the year-on-year reduction of D&V outbreaks and number of days closed across the group from 2014 to 2016

**Cost reduction due to incidence reduction:** As less residents are affected by D&V infections, the costs to the business are reduced by the following measures;

- The communities do not have to 'close to visitors' for as long as previous if an outbreak occurs – this means that more prospective residents and families can visit and chose Sunrise or Gracewell at their time of need
- Less staff sickness from D&V meaning a reduction in both sick pay & backfill labour costs
- Less need for external decontamination services

**Cost reduction due to reduced severity/duration:** Pre-introduction of the 4-point outbreak management care bundle, the duration of each D&V outbreak could be as long as 20 to 30 days inclusive of decontamination time. Excellent staff communication, rapid reporting, early intervention and proactive management utilising the TECcare cleaning and disinfection products has effectively reduced outbreak duration down to < 7 days. Reducing outbreak duration from 20 to 7 days represents a 65% reduction.

Therefore, where outbreaks have occurred the cost of these incidents has been minimised by significant reductions in outbreak duration.

By simplifying the range of products used for the cleaning and disinfection it has led to additional group-wide benefits including; (i) the reduction of stock keeping units / inventory; (ii) improved safety; (iii) increased compliance with cleaning protocols; (iv) simplified COSHH documentation.

## Discussion

In addition to the direct impact of D&V infections on our residents and their families there are major, far reaching implications to the group every time an outbreak occurs.

From a healthcare provider perspective, our priority is to provide residents and their families with a positive care experience. Therefore every D&V outbreak that occurs puts residents and staff safety at risk, and it affects the group in terms of perception and reputation.

In a highly competitive, resident focussed industry, reducing the overall number of D&V outbreaks and minimising severity and duration of any outbreaks that do occur is a common and logical goal, both clinically and economically, for all providers.

Investing in staff education and training, implementing new processes and identifying the most effective cleaning and disinfection products is a time consuming process that does incur certain unavoidable costs, however, when it is done correctly the cost savings can be significant when one considers the cost of managing outbreaks that are often either avoidable or that persist for too long once they occur.

## Conclusion

Implementing infection prevention and control best practice within healthcare settings will reduce the incidence of D&V outbreaks to a minimum, however, due to the dynamic nature of healthcare facilities, even with all appropriate preventative measures in place it is impossible to eradicate all outbreaks.

Where outbreaks do occur the clinical and financial impact of an outbreak can be minimised by adopting a pro-active approach with an educated, focussed and dedicated team working with proven products and processes.

## References

1. Health Protection Agency. English National Point Prevalence Survey on Healthcare-associated Infections and Antimicrobial Use, 2011. Preliminary data. London: 2012.
2. Otter JA, Yezi S, French GL. The role played by contaminated surfaces in the transmission of nosocomial pathogens. Infect Control Hosp Epidemiol 2011 Jul;32(7):687-99



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