

## INTRODUCTION



*Clostridium difficile* infection (CDI) and Meticillin-resistant *Staphylococcus aureus* (MRSA) are significant causes of mortality and morbidity in both healthcare and community settings. It is a commonly held belief that long stay residential and nursing home facilities carry a disproportionate burden of CDI cases and MRSA blood stream infections (MRSA BSI), and are a major contributor to the overall burden of health care associated infections in acute Trusts. High prevalence rates are often identified in studies<sup>1,2</sup> but incidence is rarely mentioned. However, the elderly population living in care homes often require frequent contact with healthcare and are then discharged into a care home, making health care exposure a significant contributor to carriage rates in care homes. We therefore reviewed data collected through national mandatory surveillance systems in the East of England to examine this issue.

## AIM & OBJECTIVES

### Aim:

To determine the prevalence of MRSA bacteraemia and CDI cases originating from care homes in East of England since April 2017-March 2018

### Objectives:

1. Comparison of the HCAI Data Capture System (HCDS) and the Public Health England second generation surveillance System (SGSS) data on MRSA/CDI cases to identify discrepancies (if any) and understand/discuss the possible reasons
2. To find out what proportion of MRSA/CDI cases were from acute trusts and community
3. To provide a baseline to inform/improve future data collection/analysis and interpretation

## METHODS

A dataset of community apportioned cases attributed to care homes was created using data from the mandatory HCDS, SGSS and the postcode of residence of the case.

SGSS data was also used to identify previous CDI episodes. Care home population was estimated from Office for National Statistics (ONS) data<sup>3</sup>.

## C. DIFF RISK INCREASES:



- HOSPITALIZATION
- NURSING HOMES/ LTC FACILITIES
- SURGERY
- COMORBID CONDITIONS

## RESULTS

- 57% (530) of the total CDI cases (922) were community apportioned.
- Only 10.6% (56) of the community apportioned cases originated from care home settings (Fig 1).
- 26% (15) of these had a previous CDI episode and 73% (41) were new cases. Annual prevalence of CDI was 1.8 and incidence 1.4 per 1000 population.
- Of the 75 MRSA BSI, 64% (48) were community apportioned.
- Of these only 7 (14.5%) originated from care home settings (Fig 2). There were very few repeated MRSA bacteraemias. The annual prevalence and incidence of MRSA BSI in care homes was 0.2 per 1000.
- No care home clusters of CDI or MRSA were identified.
- The risk factor fields in HCDS were incomplete with 60-70% being blank.
- Data from SGSS was more complete and accurate in terms of identifying care home residents than HCDS.

Figure 1. CDI cases from hospital and community

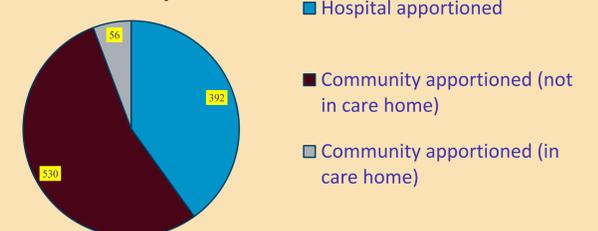


Figure 2. MRSA BSI cases from hospital and community



## DISCUSSION

From our data only a very small proportion of MRSA and CDI cases were associated with care homes. This calls into question the widely held perception that care homes are a major source of these infections, particularly as we could not identify any clusters. Most community apportioned cases were presumably living in their own homes at the time of diagnosis. Further investigation is hampered by the high proportion of risk factor fields in HCDS which are left blank.

## CONCLUSIONS & RECOMMENDATIONS

The very low prevalence figures from this study show that care homes are not the biggest contributor to community CDI/MRSA BSI in the East of England. Community apportioned CDI and MRSA cases accounted for ~60% of the total CDI cases. Further investigation may require better incentives to complete HCDS questionnaires or special studies.

## REFERENCES

1. Barr B, Wilcox MH, Brady A, et al Prevalence of methicillin-resistant *Staphylococcus aureus* colonization among older residents of care homes in the United Kingdom. *Infect Control Hosp Epidemiol* 2007;28:853-9
2. Yu H, Baser O, Wang L. Burden of Clostridium difficile-associated disease among patients residing in nursing homes: a population-based cohort study. *BMC Geriatr*. 2016; 16: 193
3. ONS: Changes in the Older Resident Care Home Population between 2001 and 2011. Accessed at <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/changesintheolderresidentcarehomepopulationbetween2001and2011/2014-08-01>