

Are we missing cases of *Clostridium difficile* cross transmission due to ward movements?

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Background

The Department of Health require all post 48 hour toxin positive cases of *Clostridium difficile* infection (CDI) to be reported under the national mandatory surveillance programme. If there are two or more cases of CDI on the same ward within 28 days this is called a Period of Increased Incidence (PII), the wards are placed on enhanced CDI audit and the samples are sent for ribotyping to see if transmission has occurred.

Within the Heart of England NHS Foundation Trust (HEFT) the emergency admission route involves admission to the acute medical unit and then transfer to specialist ward. Further ward movements occur depending on the requirements of the patient and capacity.

The aim of this study was to determine if cross transmission of CDI was going undetected due to the movement of patients between wards.

Method

All *C. difficile* toxin and PCR positive samples between April 2016 and March 2017 from HEFT were sent for *C. difficile* ribotyping. For the most predominate ribotypes with 10 or more isolates individual patient movements within the Trust were recorded. Additional data regarding wards placed on the PII audit were reviewed. Transmission was documented as occurring between patients if they had been in contact in the previous 28 days.

Results

A total of 145 specimens were submitted for ribotyping and 31 different ribotypes were identified with *C. difficile* not isolated from 6 samples, and 10 samples not having a common ribotype (Figure 1). Four dominate ribotypes 002, 014, 005 and 015, account for a total of 57 patients (Figure 2). Ribotype 002 had 18 isolates over 13 wards in HEFT. These were spread over the 3 hospital sites with 8 at Heartlands Hospital, 5 at Good Hope Hospital and 4 at Solihull Hospital. Eight patients were identified as having links with another patient in a 28 day period on four different wards. There was evidence of cross transmission in each of the four predominate ribotypes. All four wards were identified at the time of the 2nd case and went onto the PII audit.

May 2016 CDI PII Audit ribotype 015
 June 2016 CDI PII Audit ribotype 014
 October 2016 PII audit ribotype 002
 Sept /Oct 2016 PII Audit ribotype 005

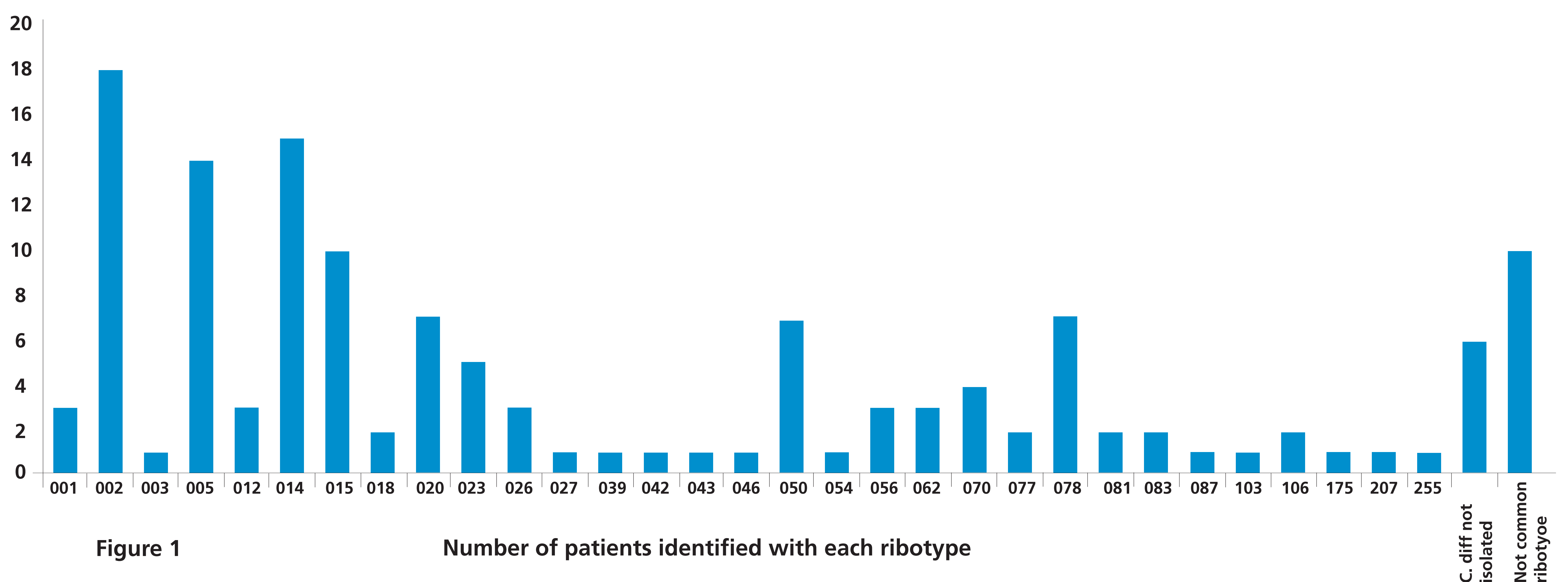


Figure 1 Number of patients identified with each ribotype

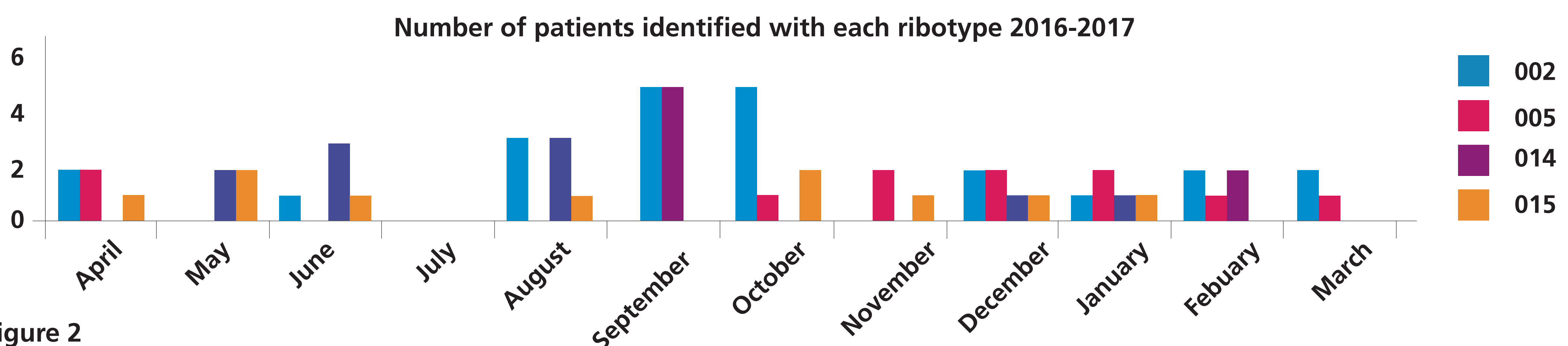


Figure 2

Conclusion

Four wards were identified as having a PII, with only two patients in each of the four PIIs. All four PIIs were identified through patients having positive results on the same ward. No additional cases of cross transmission in the admitting units were identified. This study provides assurance that cases of cross transmission are not being missed within the admitting units, and the current processes in place for investigating PIIs are appropriate.