

MRSA admission prevalence and in-hospital acquisition in a large London teaching hospital

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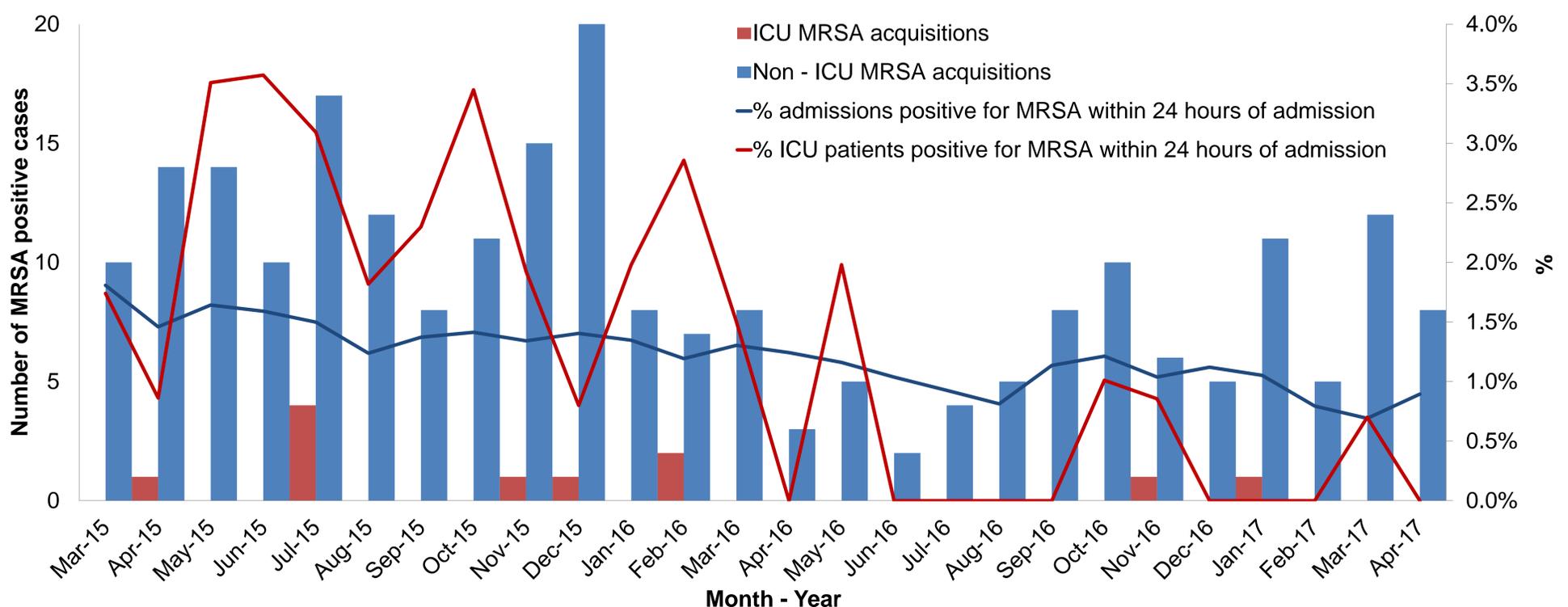
1. Introduction

- Identification of MRSA carriers is crucial to prevent cross-transmission amongst hospital patients¹.
- Whilst risk-factor based screening is now recommended nationally², we continued universal MRSA admission screening to assist with investigating MRSA BSIs.
- A retrospective investigation of MRSA prevalence on admission and in-hospital acquisition was performed at a London teaching hospital group.

2. Methods

- All MRSA screens and identified positive cases from Jan-15 to Apr-17 were reviewed.
- Admission prevalence was defined as positive screens within 24 hours of admission.
- Probable acquisitions in the in-patient population and in the Intensive Care unit (ICU) were also investigated.
- Acquisitions were defined as positive cases identified >48 hours after admission following a negative admission screen.

Figure 1: MRSA screening



3. Results

- MRSA prevalence on admission was 1.4% (1342/93166 admissions) from Jan to Dec-15, 1.1% from Jan to Dec-16 (1152/102569 admissions) and 0.8% from Jan to Apr-17 (284/34461 admissions).
- The difference in prevalence on admission between Jan-15 and Apr-17 was statistically significant ($p < 0.001$, Chi-squared test).
- MRSA acquisitions peaked in July and December 2015 with 17 and 20 cases respectively, compared to an average of 9 cases per month (Jan-15 to Apr-17).
- Investigation revealed likely MRSA transmission to have taken place on multiple wards.
- There were 7 MRSA acquisitions in the ICUs in 2015, 3 in 2016 and 1 in 2017 so far (Figure 1).

4. Discussion

- MRSA positive cases identified >48 hours after admission tended to be initially identified as negative on admission, confirming these as acquisition events.
- Probable 'unmasking' of pre-existing carriage not identified during admission screening is possible.
- We see an overall reduction in MRSA prevalence on admission and during in-patient hospital stay over a 28 months period (Jan-15 to Apr-17), (Figure 1).
- Whilst MRSA BSI are now rare, and admission prevalence is low, small numbers of MRSA acquisitions continue to occur in our hospitals.
- We plan to prospectively investigate possible MRSA acquisitions.

References

1. Bissett L., *Br J Nurs*. 2005 Apr 14-27;14(7):386-90.
2. Implementation of modified admission MRSA screening guidance for NHS, Department of Health, 2014.