Aiming for zero: reducing mislabelled microbiology specimens

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Introduction

The collection of microbiology specimens is complicated, involving multiple systems, handovers and touch-points prior to arrival in the laboratory. Mislabelled samples result in potential patient harm, wastage of time and human resources and increases rework. In 2012, the hospital noted an increasing number of mislabelled microbiology specimens received in the laboratory.

Aim

This project was implemented over a three year period to reduce the rate of mislabelled microbiology specimens.

Methodology

A multi-disciplinary team (nursing and laboratory) was assembled to identify causes, formulate interventions and implement Plan-Do-Study-Act (PDSA) cycles in two test wards.

When	Nov 12- Sep 13	Oct 13- Dec 14	Jan 15 -
Where	Two wards	Inpatient areas	Outpatient areas
Action			Spreading, data collection analysis, & monitoring

Mislabeling data was collected through the laboratory information system (LIS) and categorised by type of event and location.

Intervention

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Issue		Solution
1	Lack of standardised protocol for specimen collection and labelling	Create standard protocol and brief nurses
2	Multiple ordering pathways: i. electronic (CPOE) ii. manual paper form	Standard electronic ordering was implemented for the highest volume test (MRSA)
3	No clearly defined triggers for checking patient identifiers during the specimen collection, labelling and dispatch process	A final check on patient identifiers was performed just prior to dispatch of the sample to the laboratory.

2

Issue		Solution
1	Delayed analysis of mislabelling incidents	Immediate feedback of mislabelling events
2	Common risk factors which increase potential for mislabelling	Awareness campaign using roll-call briefing and intranet training. (see Figure 1)
3	Gaps in training of new staff	Standardisation of "on-the-job" training.

Intervention (Resources)

Figure 1: Briefing slides for mislabelling risk factors

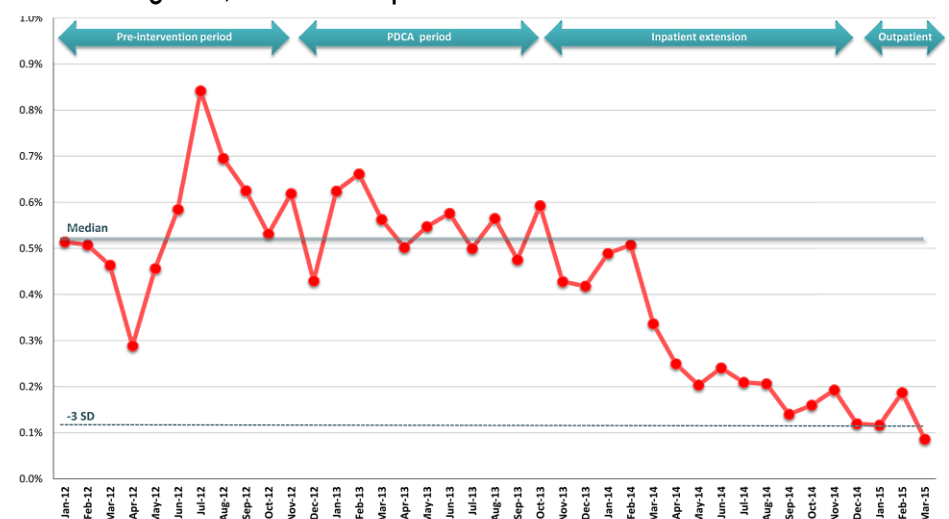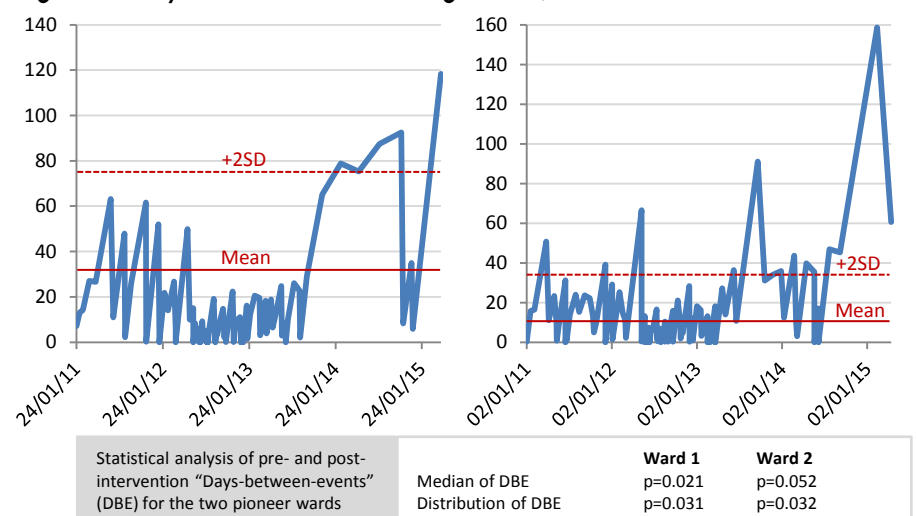## Results

Mislabelling rate, as % of all specimens received

Figure 2: Days between mislabelling events, wards 1 and 2

Statistical analysis of pre- and post-intervention "Days-between-events" (DBE) for the two pioneer wards		Ward 1	Ward 2
	Median of DBE	p=0.021	p=0.052
	Distribution of DBE	p=0.031	p=0.032

Conclusion

A significant reduction in mislabelling of microbiology specimens was achieved using a multifaceted approach. However, the timeline to achieve this reduction was significant, and required sustained efforts from multiple stakeholders.