The North West London Hospitals NHS Trust

Director of Infection Prevention and Control Annual Report 2007/08

1. Summary

This paper summarises the incidence and trends for MRSA bacteraemia and Clostridium difficile, together with activity within Infection Control over the last year. Infection Control is one of the key national targets and the Trust continues to take a proactive approach in reducing the incidence of infection. At the end of March 2008, the Trust reported a total of 33 MRSA bacteraemia cases. Six cases were submitted to the appeal panel for exclusion from the Trusts trajectory against the MRSA target. One appeal was successful and resulted in a final end of year figure of 32 cases. Whilst this was above our local trajectory of 22 cases, this is still progress in comparison to previous years and an in year improvement of 35%.

Clostridium difficile numbers across the Trust have continued to decrease in comparison to previous years. In January 2008 there was also a change to the recording of episodes. This now states that positive Clostridium difficile toxin results on the same patient within 28 days of admission are reported as a single episode.

The report provides an update on other key Infection Control issues, including root cause analysis and measures that have been put in place to address areas of concerns. Work has progressed to increase medical engagement and involvement in the infection prevention and control agenda.

The infection control team continue to provide training to all groups of staff and monitor the uptake of this training.
The annual work plan will consolidate any outstanding issues from previous action plans to ensure monitoring and sustainability of progress.

2. Introduction

In November 2007, the Director of Nursing was appointed to the role of Director of Infection Prevention and Control and is directly accountable to the Chief Executive for all aspects relating to the prevention and control of infection. The Trust Infection Control Committee has met on a monthly basis since the Department of Health visit in June 2007 and has been chaired by the Chief Executive. There is both clinical and non clinical representation and membership includes the Primary Care Trust, Directors of Infection Prevention and Control, Directors of Public Health and the Health Protection Agency. The committee ensures on behalf of the Board that there are effective arrangements for Infection Prevention and Control across the Trust and includes the development of long term and short term strategies designed to prevent infections occurring and implementations of strategies to deal with outbreaks.

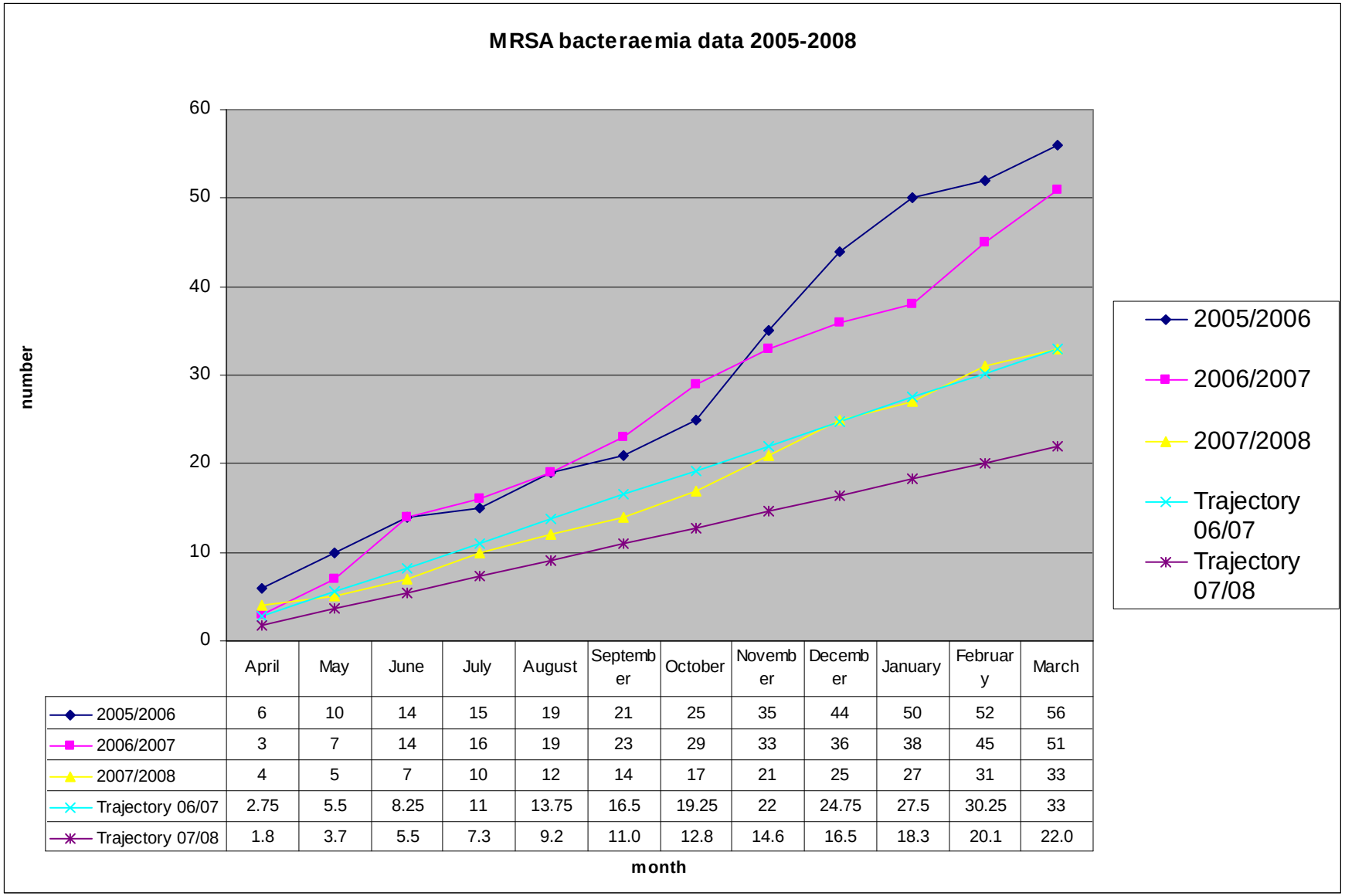
The Infection Control nursing team has had a challenging time over the last year, with particular difficulty in recruiting substantive infection control trained staff. A surveillance nurse has been recruited and several secondment opportunities have identified nurses with an interest in infection control to join the team and train as specialist nurses. Additional help and support was secured by the Director of Infection Prevention and Control in the role of Associate Director/ Deputy DIPC to provide high level leadership to the nursing team and support the infection control agenda.

The Infection Control policies have been reviewed and updated during the year to reflect changes in both local and National guidelines. All core policies required by the Health Act (2006) have been reviewed and approved by the Trust Infection Control Committee. The Department of Health assessment in June 2007 generated an action plan which has been monitored by the Infection Control Committee and the Trust Board.

3. MRSA Bacteraemia

3.1 In 2007/08 the Trust was set a trajectory of 22 MRSA Bacteraemias by the Strategic Health Authority. At the end of the year 33 cases had been reported. A total of six cases were submitted to the appeals panel to be excluded from the trust trajectory. The Trust has recently been advised that one case will be removed, resulting in an end of year total of 32. Whilst this was above our local trajectory target, this is still significant progress in comparison to previous years with an in year improvement of 35%. Indeed the numbers have remained at the lowest level since mandatory recording in 2003. Root cause analysis is undertaken on all cases and more recently this process has been extended to include a panel chaired by either the Chief Executive or the Director of Infection Prevention and Control. The aim of this is to ensure that all members of the clinical team that have been involved with the care of the patient have an opportunity to review the case, reflect on actions and disseminate lessons learnt to their respective teams

The graph below shows the accumulative number of MRSA bacteraemia per month over a three year period.



	April	May	June	July	August	September	October	November	December	January	February	March
2005/2006	6	10	14	15	19	21	25	35	44	50	52	56
2006/2007	3	7	14	16	19	23	29	33	36	38	45	51
2007/2008	4	5	7	10	12	14	17	21	25	27	31	33
Trajectory 06/07	2.75	5.5	8.25	11	13.75	16.5	19.25	22	24.75	27.5	30.25	33
Trajectory 07/08	1.8	3.7	5.5	7.3	9.2	11.0	12.8	14.6	16.5	18.3	20.1	22.0

3.2 The following table is a summary of the 33 cases to establish themes and trends.

Case number	Pre 48 hours	Post 48 hours	Contaminant	Line associated	Wound	Urine	Screened on admission	Positive	Negative
1	•			•					
2		•		•					
3		•		•					
4		•	•						
5	•		•						
6	•		•						
7		•		•					
8		•		•					
9		•							
10		•		•					
11		•		•					
12		•		•			•	•	
13	•								
14		•		•					
15		•			•				
16	•		•				•	•	
17	•				•		•	•	
18	•					•	•	•	
19	•					•	•	•	
20		•		•					
21		•		•			•	•	
22	•						•	•	
23	•		•				•		
24	•		•				•		•
25		•		•			•		•
26	•						•		•
27		•					•		•
28		•		•		•	•		•
29		•	•						
30	•		•				•		•
31		•	•				•		•
32		•							
33	•								
Total	14	19	9	13	2	3	15	7	7

Notes:

- Not all cases were Emergency admissions
- Cases 11, 22, 26, 27 relate to the same patient who had severe sepsis and had a number of antibiotic resistances which resulted in difficulties in treating the infection despite being treated for decolonisation following screening.
- The trust did not commence screening of Emergency patients until July 2007. In terms of time this relates to case 11 onwards.
- A number of in hospital infections relate to the insertion of peripheral intravenous cannulae
- 14 were diagnosed within 48 hours of admission. One case has since been agreed to be removed.
- Actions have been taken to address the identified contamination problems, including the use of 2% Chlorhexidine to clean the skin, development of a Blood Culture technique protocol, increase adherence to screening protocol and feedback from Root Cause Analysis to 'hot spot' areas with some focussed training

The key focus of work has therefore been agreed as:

- Screening and decolonisation of patients
- High Impact Interventions- Peripheral Lines and Blood Culture technique
- Antibiotic Policy compliance

4. Clostridium difficile

4.1 Changes in monitoring over the last year require data to be collected within two age ranges. The incidences of infection within the specified age groups from April 2007 to the end of March 2008 are as follows:

Age Group in years	2 -64 years	65+ years	TOTAL
Number	52	296	348

See Appendix 1 for monthly Clostridium difficile figures for 2007/2008

4.2 One of the first Clinical Care Bundles to be implemented at the Trust was Clostridium difficile.The key aspects of the bundles is that they aim to reduce variation in treatment, improve patient safety and improve patient outcomes. An initial audit was conducted between September and November 2007 to monitor compliance against each criteria defined on the care bundle. Five out of the six criteria had a 70% or above compliancy rate. Review of Antibiotic prescribing was recorded as 40% compliance with recording on the bundle audit form. Actions were put in place to increase teaching and training to Medical Staff and monitoring of practice by the Antibiotic Pharmacist. Following the Healthcare Commission Reports of Clostridium difficile outbreaks at Stoke Mandeville Hospital and Maidstone and Tunbridge Wells, a Core Care Plan was also developed to supplement the care bundle and address some of the on going care issues relating to patients with Clostridium difficile infection.

4.3 In January 2008, the Trust undertook a retrospective audit of patients who had died but were also Clostridium difficile positive. Eighteen sets of notes were audited by the Consultant Microbiologists and the Associate Director of Infection Control from inpatients between April and December 2007. The aims of the audit were:

- To ascertain from the diagnosis to death whether Clostridium difficile was causal or contributory or whether it was listed on the Death Certificate.
- To check adherence to the Trust Antibiotic Policy
- To ascertain the speed at which management was implemented

To summarise, the audit highlighted a number of issues relating to the completion of death certificates, prompt isolation of patients with diarrhoea and adherence to the Antibiotic Policy. A number of actions have been put in place to address these as follows:

- Further training on the use of the Care Bundle
- Guidelines for the Completion of Death Certificates (where a Healthcare Associated Infection is an issue) has been launched and implemented
- Audit findings have been shared with the Antibiotic Pharmacist
- New ‘ Malnutrition Universal Screening Tool ‘ (MUST) workshops
- Documentation and record keeping is to be monitored by the Matrons as part of Key Performance Indicators.

5. Untoward incidents including outbreaks

5.1 A cluster of Acinetobacter baumannii (MDRAB) colonisation was recognised in September 2007. This was initially discovered as a patient admitted to the Coronary Care Unit at Central Middlesex Hospital was found to have a MRAB in their sputum. By the time the organism was isolated, the patient had been discharged home. Patient and Environmental screening was undertaken, resulting in identification of further patients with colonisation and contamination of the environment. Deep cleaning was instituted in the Wards, ITU, CCU and A&E, with the units being closed whilst this was carried out.

The Health protection Unit was made aware of the outbreak from the beginning and a formal request for assistance with the investigating the root cause of the outbreak was made by the Chief Executive in mid October. The outbreak was declared as a Serious Untoward Incident to London Health Authority. Throughout the outbreak the Trust continued to seek advice and support from the Infection Control lead at NHS London and also the Department of Health to ensure no obvious interventions were missed.

A copy of the action plan for the Serious Untoward Incident investigation was signed off by the Trust Board in March 2008 and confirms that all recommendations have been completed. The Trust was commended by the Strategic Health Authority Infection Control Lead for the management of the outbreak.

5.2 During 2007/08 there have been several sporadic cases of diarrhoea mainly on the Northwick Park site and have affected different wards. These cases were later confirmed as Norovirus and in all cases the outbreak was quickly brought under control with no further patients or members of staff becoming affected. Wards and bays were closed for short periods of time to minimise spread. A prompt response from members of staff and the Infection Control team resulted in minimal disruption to the

Operational functioning of the hospital. Both the Policy for' Closure of wards, departments and premises to new admissions' and the Policy for the' Control of Outbreaks of Communicable Disease in Hospital including Major Outbreak Policy' were reviewed and updated at the beginning of 2008 and ratified by the Trust Infection Control Committee

6. ESBL

6.1 A total of 1122 isolates were identified in 2007/08 from 766 patients. 744 of the isolates were from the community. This represents a decrease in terms of numbers of affected patients, which was 903 in 2006/07. The highest numbers are from the blood and urine and E- coli is the most predominant organism identified. However to note, there has been a rise in the numbers relating to the Maternity Unit and the Neo-natal unit and this corresponds to the increase in prevalence in the community. Further work is being undertaken by staff from these units supported by the Infection Control team.

7. Ventilator Associated Pneumonia

7.1 During the last year the Intensive Care Unit has audited 980 sets of patient's notes against the Ventilator Associated Pneumonia Care Bundle. The care bundle aims to reduce the incidence of ventilator associated pneumonia as respiratory infections are the second largest contributor to hospital acquired infections on England. There are five main best practice criteria to benchmark against. The following table represents the percentage of patients achieving this standard.

Aspect of care	N=	% Patients Achieving standard
Sedation Hold	**330**	**70%**
Gastric Ulcer prophylaxis	**975**	**99.69%**
Deep Vein Thrombosis prophylaxis	**974**	**98%**
Elevation of the head of the bed to 45 degree	**974**	**98%**
Intubation	**976**	**74%**

8. Key work streams

8.1 Orthopaedic Action Plan

In November 2007 an audit of surgical site infections in Orthopaedics was presented to the Trust Infection Control Committee and confirmed a 2.5% early deep infection rate of primary hip and knee arthroplasties for the period April- June 2007. This was above the rate of infection recognised as the acceptable average by the British Orthopaedic Association. A proactive response was taken by the Trust and a meeting arranged with the lead Consultant Orthopaedic Surgeon, Microbiologist, the Director of Infection Prevention and Control and all other relevant staff. A number of potential causes were identified and an action plan developed to address areas of concern. The plan has been updated and reviewed regularly to ensure all actions have been completed. The HPA Surgical Infection Site data covers the four periods within the calendar year. The end of 2007 year data reported no infections.

8.2 Blood Culture Protocol

Reflection and analysis of the root causes of the MRSA Bacteraemia highlighted concerns regarding the technique used to take Blood Cultures. A number of positive results suggested that the samples were contaminants. Measures were put in place to try and address these concerns. Focussed training was delivered by the Infection Control Nurse and Consultant Microbiologist. The preparation used to decontaminate the skin was changed to 2% Chlorhexidine and is now included in the Blood Culture pack. A protocol has also been developed and subsequently approved by the Trust Infection Control Committee to improve practice of Blood Culture sampling technique. Further audit work is also being undertaken.

8.3 Completion of Death Certificate Guidelines

Any incidence where a Healthcare associated infection is cited as Part 1a or 1b on a death certificate is reported to the Strategic Health Authority as a Serious Untoward Incident. A panel chaired by the Medical Director reviews all cases. It was noted that not all causes of death were as certified attributable to MRSA and Clostridium difficile. A guideline was therefore developed with an aim of standardising practice in the completion of Death Certificates. It also provided a clear process for medical staff to follow if a Healthcare associated infection was a feature in the patient's illness and whether this was a causal or contributory factor.

9. Core Standards for Better Health Standard 4a Infection Control

9.1 Compliance against the core standard has been monitored closely by the Trust Board. In March 2007 the Trust had declared full compliance of Core Standard 4a. A spot check of this took place in October 2007 to monitor on going performance against this standard. This standard requires Healthcare organisations to keep patients, visitors and staff safe by having systems to ensure that the risk of infection is reduced, having high standards of hygiene and cleanliness and achieving a year on year reduction in MRSA. The Healthcare Commission concluded that there was sufficient evidence to demonstrate full compliance.

9.2 Hygiene Code of Practice- the Trust Board has received quarterly updates on the action plan relating to the 11 duties from the Health Act.

10. Environmental Cleanliness

10.1 In November 2007, the Chief Nursing Officer announced a number of measures and actions to improve cleanliness and Infection Control. This included a Deep Clean programme and monies were made available from the Strategic Health Authority to commission and complete this programme. Wards and bays were decanted to ensure a thorough clean, minor works were undertaken and new and disposable equipment was purchased. This programme was successfully completed within the specified time frame by March 2008.

10.2 During the year both the Matrons and Infection Control team have been actively involved in the 'Patient Environment Action Team inspections. Working closely with the Estates and Facilities team, there has been regular monitoring and auditing of environmental cleaning standards. Where standards have not been met, action plans have been put in place to correct this. The Infection Control team have been involved in service level agreements and the re-tendering process to ensure that quality and infection prevention and control are included in service specifications

11 Brent and Harrow HCAI Group

11.1 Joint working has continued throughout the last year to establish a cohesive and co-ordinated approach to the prevention and management of Healthcare Associated Infections across the local health economy. The work of the group has been strengthened by Director level membership to facilitate high level decision making and implementation of agreed actions. Protocols have been developed together to ensure a high standard of patient care and consistency of approach, for example the MRSA Decolonisation Protocol. There is an agreed sharing of information protocol and full involvement in Root Cause Analysis of the pre 48 hour MRSA bacteraemia cases. A work plan is currently being developed to progress the work of the group during 2008/09.

12. Staff training in Infection Control

12.1 The following table illustrates the number of trust staff trained by the Infection Control team during the last year. This includes all groups of staff and training that is delivered at both Induction and Mandatory training sessions. In addition the Domestic staff have also received training from their respective in house infection control teams. ISS at Central Middlesex hospital have trained 100% of their staff in infection control and Sodexho at Northwick Park and St Marks have trained 90%

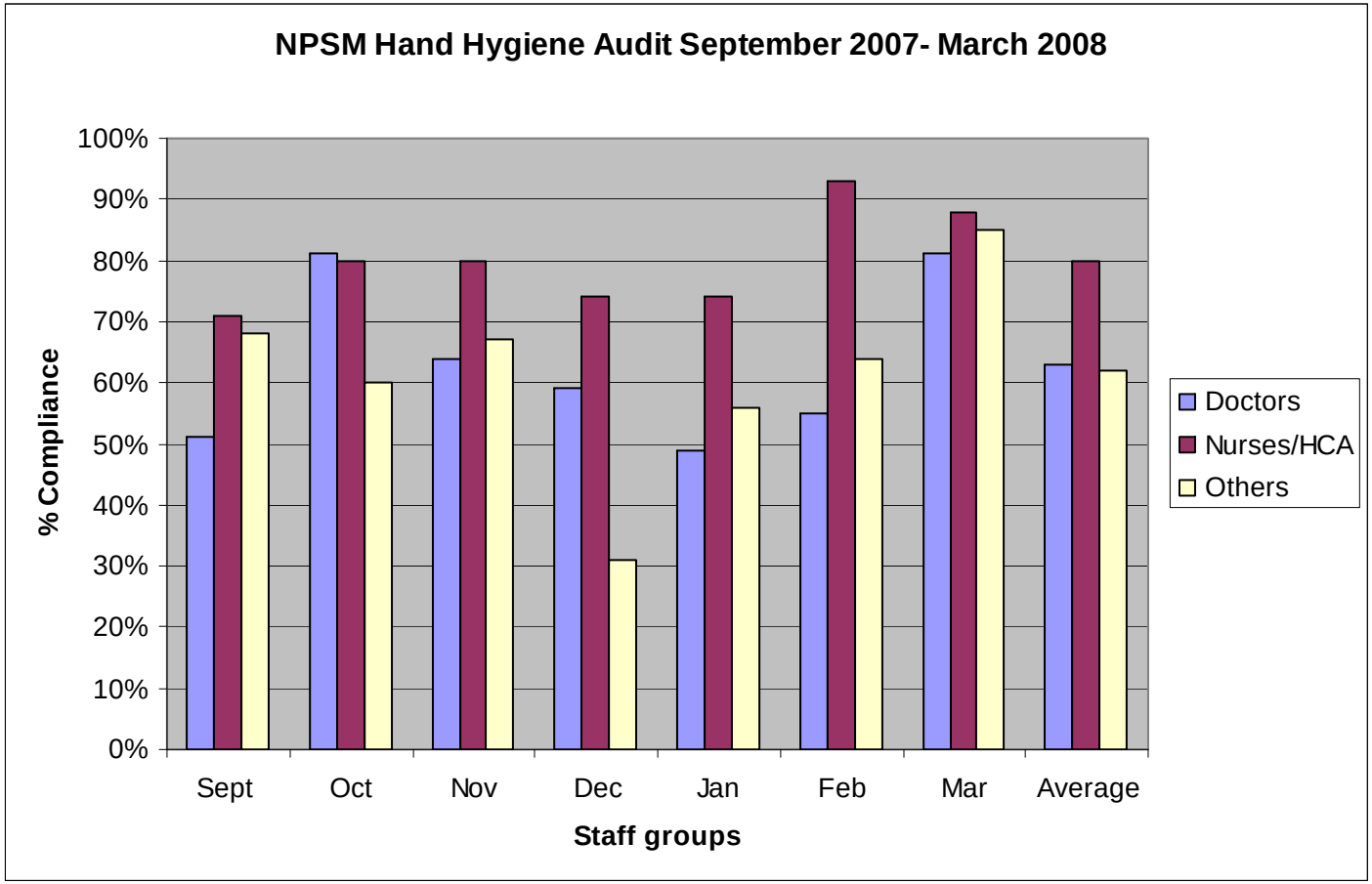
YEAR	INDUCTION	MANDATORY	DOCTORS	MEDICAL STUDENTS	DOMESTIC	TOTAL
07/08	355	1052	338	166	31	1942

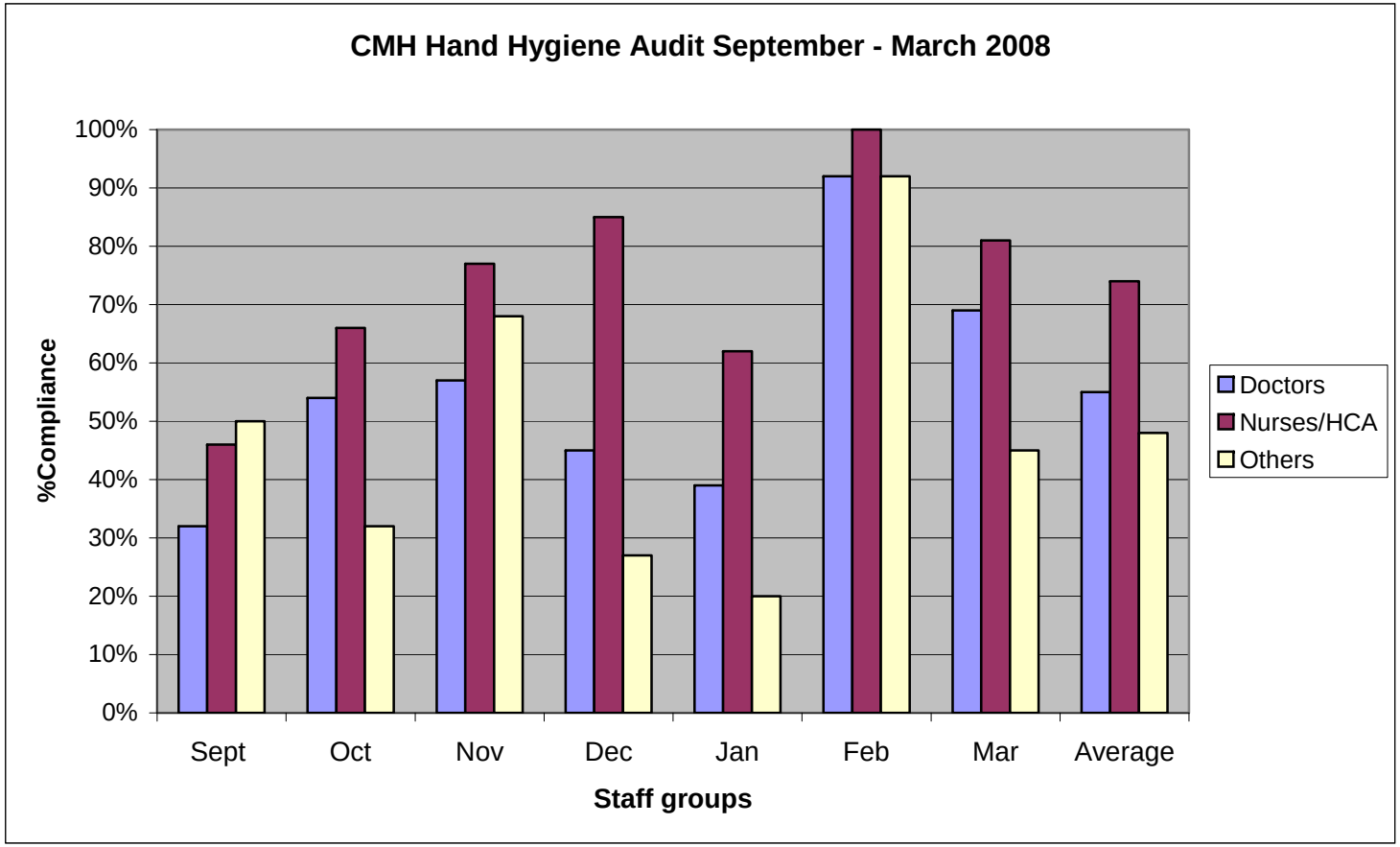
12.2 In February 2008, the trust organised a focussed week on training. With the help of an external company, the 'Hour to save a life' communications exercise was used as is was specifically designed to impact on healthcare associated infections in a hospital setting. Training sessions included a video presentation tailored to North West London Hospitals in relation to MRSA and Clostridium difficile. The Clinical Director for Critical Care also presented at the Grand Round looking at best practice for Central Venous Catheter Insertion. During the week a team of Infection Control Nurses visited wards and departments across the sites to deliver on the spot training. The ultra violet light box was used to illustrate to staff the effectiveness of their hand washing technique. Over 450 staff participated in this event which was well received, with some very positive feedback.

13. Hand Hygiene Report

A programme of hand hygiene audits has been completed at the Trust from September 2007. The programme was developed with the input of mystery shoppers and they have continued to support the Trust with this programme of regular monitoring. However the wards and departments have taken the responsibility for weekly audits, twice weekly in areas of infection outbreaks and these audits are now supplemented by the mystery shopper reports.

The following two graphs demonstrate the results in compliance in hand washing from staff groups including doctors, nurses and other disciplines. This has been collated from the number of audits that were received from the wards and departments. However it must be noted that some of the audits recorded small numbers of opportunities for observation of hand hygiene practice.




CMH Hand Hygiene Audit September - March 2008
%Compliance
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Sept
Oct
Nov
Dec
Jan
Feb
Mar
Average
Staff groups
Doctors
Nurses/HCA
Others

14 Looking Forward

The Infection Control Annual Plan for 2008/9 will consolidate outstanding issues from the DOH Improvement Action Plan and in addition continue the actions identified from the Stoke Mandeville and Maidstone and Tunbridge Wells benchmarking exercise. This years plan will be build on the foundations of the previous years but aim to increase in particular medical clinical involvement and engagement in order to achieve a continued reduction in MRSA bacteraemia and a corresponding reduction in Clostridium difficile. Nine medical clinical champions have now been appointed to progress this. The following are key priorities to develop and focus the work programme:

- Screening of all Emergency patients and to decolonise high risk or MRSA positive patients
- Hand Hygiene
- Antibiotic stewardship
- High Impact Interventions
- A sustainability programme for Infection Control Policy compliance

APPENDIX 1

C diff Monthly Figures - 2007/8