West Hertfordshire Hospitals NHS
NHS Trust

Paper 59/07(ii)

The Management of Infection Control In West Hertfordshire Hospitals NHS Trust

An Overview

1. Introduction

This paper describes the current arrangements within the Trust for the detection, management and control of infection. The paper provides specific detail with regard to the management of MRSA and Clostridium Difficile Associated Disease (CDAD) given the high profile nature of these infections. The paper provides the Board with assurance that systems and processes are in place to respond to and deal with Health Care Associated Infection (HCAI). Appendix A provides a summary of the points within the Trust where infection control issues are discussed and referred.

This paper should be read in conjunction with that prepared on the Code of Practice for Healthcare Acquired Infection which is being presented to the Board and covers the wider issues of the control of infections more generally.

2. Background

The detection, management and control of infection is part of the daily routine of the NHS. More recently, and especially since the advent of infections that are more resistant to eradication and more easily communicated, this has become a high profile, national issue.

The Department of Health is firmly committed to reducing HCAI. It has produced a number of documents: *Getting Ahead of the Curve, Winning Ways: Working Together to Reduce Health Care Associated Infectionin England,* and *Towards Cleaner Hospitals and Lower Rates of Infection: A Summary of Action*, as guideance to reduce HCAI. The most recent, *Saving Lives: A Delivery Programme to Reduce Health Care Associated Infection Including MRSA* and *Essential Steps to Safe Clean Care: Reducing Health Care Associated Infection*, provide guidance on moving toward compliance with these policies, best practice and evidence based care. Participation in this programme will help demonstrate compliance with the Code of Practice.

Following the high profile incidents at Stoke Mandeville Hospital in 2005/06 the control and management of CDAD has become a significant priority for the NHS nationally. A summary of the Healthcare Commission's investigation into

clostridium difficile outbreaks at Stoke Mandaville Hospital has been presented previously (see appendix B).

A 60% MRSA bacteraemia reduction target was set for the NHS in 2004. NHS Trust performance has been supported by the Saving Lives initiative and the MRSA Improvement Team who visited the Trust in July 2006.

The National Audit Office Reports provide a substantial account of HCAI and its impact on the NHS. Summaries of the reports are at appendix C.

3. General Overview of The Management of Infection Control

In WHHT the Medical Director is the nominated Executive lead for infection control related issues. Following the publication by the Chief Medical Officer of Winning Ways in 2003 NHS Trusts were required to appoint a Director of Prevention and Infection Control (DPIC) with direct accountability to the Chief Executive. Dr Robin Wiggins, Consultant Microbiologist is the Trust's Director of Infection Control. The roles of the DPIC can be summarised as to

- Be responsible for the Infection Control Team within the organisation
- Oversee local control of infection policies and their implementation
- Report directly to the Chief Executive (not through any other officer) and the Board
- Have the authority to challenge inappropriate clinical hygiene practice as well as inappropriate antibiotic prescribing decisions
- Assess the impact of all existing and new policies on HCAI and make recommendations for change
- Be an integral member of the organisation's Clinical Governance and patient safety teams and structures
- Produce an annual report on the state of HCAI in the orgnaisation for which he or she is responsible and release it publicly

In addition to the DPIC the Trust has an Infection Control Team (ICT)made up of specialist nurses. This team is led by Jiovanna Foley. The key functions of the team are :

♦ To act as a resource for, and provide expert specialist infection control advice to all healthcare workers, patients, relatives and key organisational committees/groups.

♦ To formulate and undertake an annual programme of 'alert' organism and condition surveillance of infection e.g. MRSA, *Clostridium difficile,* including the identification and control of outbreaks.

♦ To provide expert infection control advice and support to clinical teams on the development of standards, audits and research.

- To plan and deliver ongoing specialist infection control training and education for all healthcare workers.

Transfer of ownership and responsibility for the prevention and control of HCAI from the ICTs to clinical teams has been a key strategic objective for the last 2 years. Each division has a lead for infection control and meets regularly with the Infection Control Team. In line with Winning Ways, each Division has an action plan to ensure that there continues to be a focus on infection control, with clear Divisional targets and requirements. These are reviewed regularly by the ICT and Infection Control Committee who advises on changes and improvements. Divisional infection control leads also present information at relevant clinical and non clinical meetings, updating on progress with the action plan and key issues that have arisen/need to be tackled.

It has now been arranged that reporting of infection control related issues will be quarterly to the Board. The Board receives monthly reports on the numbers of cases report for both MRSA and CDAD through the Performance Report. This reporting will continue, however, the quarterly report will be an opportunity to review progress being made in relation to actions being taken to control infection and to provide assurance to the Board that the necessary systems and processes are in place to manage the agenda appropriately. Issues of significant concern will be discussed by the Medical Management Team and the Trust Executive. Should there be issues that cannot be resolved by these groups appropriate escalation will be made to the Board.

4. Clostridium Difficile Associated Disease (CDAD)

In 2006, the publication of the second year of the Department of Health *C.difficile* mandatory surveillance data emphasized the need for the Trust to control and manage CDAD. In 2005 WHHT ranked 3rd worst in relation to rate and 6th worst in terms of absolute numbers out of 169 Trusts. Our high numbers/rates of infection and clinical concerns that the nature of the disease had become more severe created an urgent need for improvement and for the institution of nationally recognized best practice. The almost simultaneous publication of the Healthcare Commission's report on the outbreaks of CDAD at Stoke Mandeville Hospital emphasised the importance of the issues. A report on *Clostridium difficile* Associated Disease (CDAD) incorporating a summary of the Healthcare Commission's investigation and recommendations of actions to be taken forward within the Trust for its management and control was produced by the Infection Control Team. This was presented on 31st August 2006.

A multi-disciplinary team was convened in early 2006 initially meeting 2 weekly. This group now meets weekly - every Monday morning at HHGH. The ICT recommendations are under active discussion by the multi-disciplinary group under the following headings.

Rapid Isolation of known and suspected cases

- Internal monthly data supports a substantial improvement in isolation of symptomatic patients in the clinical areas since July.
- Incident forms continue to be completed when isolation facilities are lacking and this is being recorded on the Trust 'Datix' risk management data base
- The Medical Division set up an MRSA cohort bay at HHGH in July/August 2006. This bay is in constant use and is rotated at periodic intervals between the medical/elderly care wards. This increases the availability of side rooms for isolating cases of CDAD.
- Discussions continue around the need for a dedicated isolation area/cohort areas for the management and care of *C.difficile* patients, acknowledging that implementation of an isolation area will have financial and operational consequences.

Application of high standards of hygiene

- Conventional cleaning followed by chlorine-based disinfection (Chlor-clean) in affected areas is now part of our daily environmental decontamination practice. This commenced in July 2006 on Croxley and Lancaster wards and has since been rolled out to the areas below from August 2006. For other in-patient wards at HHGH this product is available and used for decontamination of isolation rooms/areas accommodating *C.difficile* patients.

HHGH		WGH		
Lancaster		Croxley	Sarratt	RAU
York	Stuart	Cassio	Aldenham	
St. Peters	Boleyn	Heronsgate	Flaundan	
Churchill	Simpson	Ridge	Langley	

This has a financial implication and requires the revision of the Medirest contract on the Hemel Hempstead site.

Restriction of the movement of patients between wards

The ICT and clinical staff continue to be concerned that the frequency of patient movement between wards and high bed occupancy levels, conflict with infection control practice. Discussions are in progress to explore ways of reducing patient movement between wards especially at WGH site.

Appropriate use of antibiotics, and usage of PPI (Proton Pump Inhibitors)

At ward level the pharmacists assist in monitoring the use of antibiotics. The Trust has, for some time restricted the use of certain antibiotics and more recently the Trust Antibiotic Policy/Guidelines have been extensively reviewed This work is being continued and will include the use of antibiotics for prophylaxis and new approaches for policing use. Data relating to antibiotic usage is fed back to the clinical areas and training and education in antibiotic

prescribing is provided for junior doctors and other related clinical staff. An audit of the use of PPI is underway – overuse would simplify CDAD problems.

Clinical Management and treatment of CDAD

A clinical workstream has been established to optimize the management and treatment of *C. difficile* infected patients. This will include a treatment algorithm, surgical referral guidelines and information for General Practitioners.

Surveillance

The need for enhanced clinical surveillance (cf of laboratory data) and typing of *C. difficile* isolates is being addressed but is hampered by lack of IMT and supporting resources.

Trial of a Bowel Management System (BMS)

A research grant application to study the effect of using a BMS on the incidence of ward-acquired CDAD and other related outcomes was successful. The study will start on 4 study and 4 control wards in April. The rationale is that reduction in environmental contamination will result in less transmission.

Reinforce the need for Infection control practices to be an integral part of the daily routine of all clinical staff

The Trust ICT, Matrons, Infection Control representatives from the divisions and others continue to reinforce compliance with fundamental infection control practices e.g. hand washing, isolation procedures and decontamination of environment and equipment. Observational audits of some of these facets are undertaken as part of the High Impact Intervention audits in the 'Saving Lives' initiative.

The increased focus on CDAD in 2006 – initially the promotion and reinforcement of existing practice and (from April/May) the additional work on the work streams above – resulted in a substantial decrease in cases in the latter half of the year (tables 1 and 2). This quantitative observation was paralleled by a decrease in anecdotal reports of severe disease and complications. Work is in progress to examine attributable mortality and severe complications more objectively – so far this corroborates the perception of a reduction in both compared with late 2005 and early 2006.

National data for January – September 2006 was published in January 2007. WHHT ranked 149th out of 168 Trusts for CDAD rates.

Regrettably the position worsened in January (and continues in February – data not yet complete) when the incidence of hospital associated cases almost doubled. There is a recognised seasonal effect (possibly associated with respiratory illness and antibiotic use) and combined with increased

activity levels in the Trust this has compromised our ability to manage the problem within the existing parameters. The degree to which we comply with national best practice is fundamental in determining the future direction and we propose to address this by implementing the relevant High Impact Intervention from Saving Lives (a ready made audit tool).

Table 1: Hospital In-patient CDAD isolates (all ages) recorded by the Infection Control Nurses

C.difficile Isolates	2005-2006	2006-2007	Difference
Quarter 1 (April-June)	231	172	25% reduction
Quarter 2 (July-Sept)	162	117	28% reduction
Quarter 3 (Oct-Dec)	132	119	10% reduction

Table 2 – *Clostridium difficile* data presented to the Weekly Monday morning meeting 15/1/07

	Jan – June 06	July – Dec 06	Change
WGH	175	136	-22%
HHGH	160	97	-39%
Total	335	233	-30%
	05/06 (Q1-3) 525	06/07 (Q1-3) 408	-22%

Appendix D provides a summary of for the last 3 years.

5. MRSA Bacteraemia

Table 3 summarises the West Hertfordshire Hospitals NHS Trust experience of MRSA Bacteraemia in the first 2 years of the 3 year reduction target (2005/2006 and 2006/2007).

Table 3: WHHT 2 Year MRSA Bacteraemia Performance

	MRSA Bacteraemias					
	2005/06			2006/07		
	WGH	HHGH	Total	WGH	HHGH	Total
April	3	4	7	0	3	3
May	2	3	5	2	4	6
June	2	3	5	3	1	4

July	2	0	2	3	1	4
August	4	2	6	3	3	6
September	2	1	3	1	1	2
October	0	0	0	1	1	2
November	4	1	5	1	2	3
December	3	3	6	1	0	1
January	3	4	7			
February	4	0	4			
March	1	1	2			
Total	30	22	52	15	16	31
Target			36			27
Total for 2001/02			77			
Total for 2002/03			40			
Total for 2003/04			45			
Total for 2004/05			53			

The first year's performance was described in the last Infection Control Annual Report (for 2005/06). There were 52 MRSA Bacteraemia against a target of 36. The 3 year target is a 60% reduction from the 2003/04 baseline year when there were 45 MRSA bacteraemia.

The approach described in the Report for 2005/06 continued into 2006/07 and was heavily predicated on intravenous line care, screening and decontamination. This was augmented after the MRSA Improvement Team visit in July 2006 by an additional series of Action Plans, the last (and simplest) of which is attached.

The first 2 quarters of 2006/07 were disappointing. The monthly recovery trajectory for the remainder of the year is 2 MRSA bacteraemia. This was achieved for September and the third quarter but optimism was short lived and the January performance was disappointing.

These bacteraemias are investigated by the Divisions supported by the Infection Control Team. Recently the focus has been on the use of a Root Cause Analysis tool (derived from the NPSA RCA tool and our in-house report formats). These reports are now sent to the PCT and summaries forwarded to the SHA. Performance data is sent to the Chief Executive (weekly), the Executive (monthly) and each bacteraemia is reviewed with the Medical director and the DIPC (weekly). 33 of the 37 episodes to date have been reviewed in detail. There were 17 bacteraemias in WHHT inpatients and 14 developed in community settings (there were 2 contaminated blood cultures).

Intravascular line insertion and care was associated with 10 of the 17 WHHT cases (8 of the 10 involved central lines). The Saving Lives High Impact Interventions for line care are being used to influence practice through 'short loop' (immediate feedback) audit. 5 of the 17 had no obvious source and 3 of

these patients were not known to be MRSA positive prior to the bacteraemia and the remaining 2 only shortly before. Enhanced and liberal use of the decontamination regimes and an enhanced screening policy is the only preventative strategy and has been advocated.

In contrast 9 of the 'community' bacteraemias occurred in known MRSA positive patients. In only 3 of these was there any potential for WHHT influencing the care of these patients and in no case was there a suggested preceding event involving the Trust. There are gaps in the understanding of 'community acquired' bacteraemia - the majority are probably sporadic unpredictable events occurring at a low rate in a large population. However the majority of the 14 (12) were felt to have a recognisable source and, informed by better data, it may be possible to identify areas where care can be improved for subsets of this (large) population of patients and influence the occurrence of bacteraemia in the community. This is now being explored with the PCT.

Attached at appendix E is the current version of the MRSA Implementation Plan.

6. Actions Required

The Board is asked to note the content of the paper, specifically in relation to:

- Systems and processes in place to respond to and monitor both CDAD and MRSA
- Specific actions and progress being made in relation to both CDAD and MRSA

Appendix A

Points of Discussion and Escalation

Discussion Point	Level of Discussion	Referral Points
Divisional Teams	Divisional Action Plans and feedback from Infection Control Committee and weekly meetings	Infection Control Committee and Weekly Meetings
Weekly Meeting	Review of previous weeks data and immediate issues and actions needed	Infection Control Committee, Medical Management Group, Directors Meeting
Infection Control Committee	Consideration of Divisional action plans, review of Trust wide data, discussion/comment on national policy initiatives and changes	Medical Management Group, Directors Meeting. Executive Team, Assurance Committee, Weekly Meetings
Medical Management Group	Issues referred from weekly meetings, Infection Control Committee, Trust Executive, Assurance Committee Clinical practice issues that impact on the strategic direction of the Trust	Trust Executive, Assurance Committee, Infection Control Committee
Directors Meeting	Issues referred from weekly meetings, Infection Control Committee, Medical Management Group, Assurance Committee Media and reputation handling issues	Trust Executive, Medical Management Group, Infection Control Committee, Assurance Committee
Executive Team	Issues referred from weekly meetings, Infection Control Committee, Medical Management Group, Directors Meeting, Assurance Committee	Assurance Committee, Infection Control Committee, Medical Management Group, Directors Meeting
Assurance Committee	Scrutiny of Trust performance and strategic issues Consideration of those issues referred by Infection Control Committee, Medical Management Group, Directors Meeting, Trust Executive Consideration of advice on national policy	Trust Board, Infection Control Committee, Executive Team, Medical Management Group, Directors Meeting
Trust Board	Strategic overview of Trust performance, receipt of formal reports from the Medical Director and Director of Prevention and Infection Control, consideration of national policy implications and advice from Assurance Committee	Referral back to internal systems and processes or, when necessary, external organisations

Appendix B

Extract from Report to the Board August 2006

Summary of Healthcare Commission's investigation into *Clostridium difficile* at Stoke Mandeville Hospital

The Healthcare Commission undertook an 8-month investigation at the request of the Secretary of State into *Clostridium difficile (C. difficile)* at Stoke Mandeville Hospital as a result of 2 outbreaks, which resulted in a number of deaths. In the initial outbreak (October 2003 - June 2004) there were 174 new cases and 19 deaths associated with *C. difficile*, with the 2nd outbreak (October 2004 - June 2005), resulting in 160 new cases and 19 further deaths associated with *C. difficile*.

The first outbreak was a consequence of a poor patient care environment, poor infection control practice, lack of isolation facilities and insufficient priority being given to the control of infection by senior managers.

The Trusts leaders failed to control the second outbreak because they were too focused on service reconfiguration and Government Targets, insufficiently focused on clinical risk, had a dysfunctional governance system, failed to give sufficient priority to its management, or learn from the first outbreak and chose not to follow the advice of their infection control team or the Health Protection Agency.

<u>Factors contributing to the outbreaks</u>

- Difficulties Isolating patients due to reconfiguration of wards, ring-fencing of beds, and determination to meet Government targets in A&E, led to some patients with diarrhoea being kept in or put on open wards rather than in isolation facilities. This central element was compounded by resistance to the establishment of a dedicated isolation facility in both outbreaks and its premature closure in the second.

- Excessive and inappropriate movement of patients to different wards with no effective action taken to stop this happening.

- Infection control practices not being an integral part of the daily routine of all clinical staff.

- The nature of the environment meant that the control of infection was particularly difficult e.g. shortage of siderooms and handwashing facilities.

- Cleaning/decontamination practices in clinical areas were unacceptable.

- Shortage of nurses partially because of financial problems.

- An unusual type of *C. difficile* causing a more severe infection than other types.

- The SHA focus on Trusts delivering the top national priorities including Healthcare Acquired Infections. MRSA was one such priority, but infection with *C. difficile* was not.

- Incidents that had been reported consistently highlighted problems with the movement of patients, patients on inappropriate wards, low levels of nursing staff, problems associated with the delivery of the Government's targets and the failure to isolate patients with infections. Although many of these required consideration and resolution at a senior management and Board level they were not discussed by the Governance Committee nor the Board.

Appendix E

WEST HERTFORDSHIRE HOSPITALS NHS TRUST ~ IMPLEMENTATION PLAN

REVISED: MRSA/CLEANER HOSPITALS TEAM: MISSION ~ TO REDUCE MRSA BACTERAEMIAS BY 60% OR MORE

No	Action	How it will be Achieved	Lead (s) Responsible	To be actioned by when	Actual date of Implementation	List of Individuals & Departments Involved in this Change	Reviewer	Date of Review	Evaluation/ Measures of Success e.g. no MRSA Bacteraemias in Augmented Care by December 2006
1	To reduce the number of pre 48 hr bacteraemias by 50% by December 2006	PCT and the Acute Trust to meet on the 17.10.06 to agree the solutions and actions	Medical Director	31.12.06	Ongoing	Pat Reid Karen Bowler Graham Ramsay Gary Etheridge Jiovanna Foley Robin Wiggins Tracy Cooper Dr Milne	Robin Wiggins to review no of pre 48hrs	Ongoing	From 12 to 6 (average of1.2 infections to 0.6)) All bacteraemias reviewed by DIPC All bacteraemias reviewed at weekly IC mgts
2.	To continue weekly ward audits on the high impact interventions	The Matrons to audit the wards, collect the evidence and present their reports at the monthly MRSA Improvement Team meetings	Hon/M	23.11.06	First reports presented on 13/12/06	Pat Reid Karen Bowler Sue Cole Elaine Donald Caroline Dilks	Gary Etheridge	Monthly	Reports presented at monthly MRSA Improvement Team Meetings
3.	Daily review (by team leader) of all intra venous lines and urinary catheters for compliance with	Nurse Team Leader to review each patient daily & document outcome	All Heads of Nursing Matrons	Commence 01.03.07		Brenda Rance Fiona Jane Mitchell Marisa Valori Angela White Paula Wilkinson Carolyn Morrice Carolyn Dilks	HoN/M	Monthly	Number of inappropriate devices is reduced and best practice promoted

No	Action	How it will be Achieved	Lead (s) Responsible	To be actioned by when	Actual date of Implementation	List of Individuals & Departments Involved in this Change	Reviewer	Date of Review	Evaluation/ Measures of Success e.g. no MRSA Bacteraemias in Augmented Care by December 2006
	high impact guidance. Non compliance findings will be challenged and rectified immediately								
4.	Review the last infection control update/induction attendances for all staff	A summary of attendances and non attendances will be provided by David Goodyear and Jane Barrett and sent to Gary Etheridge and Graham Ramsay	Manager, Postgraduate Centre, HHGH Head of Training & Development	03.11.06 & thereafter quarterly	03.11.06	David Goodier Jane Barrett	Graham Ramsay Gary Etheridge	Review data quarterly	

No	Action	How it will be Achieved	Lead (s) Responsible	To be actioned by when	Actual date of Implementation	List of Individuals & Departments Involved in this Change	Reviewer	Date of Review	Evaluation/ Measures of Success e.g. no MRSA Bacteraemias in Augmented Care by December 2006
5.	Consultants to demonstrate proper hand hygiene during patient care	Ward round and outpatient form completed by a member of the nursing staff daily. The form to be summarised and reported at MRSA Improvement Team meetings	Medical Director	Mid Nov '06	Form agreed on 13/12/06 Implementation on 01/01/07 for a trial period of 3 months	All Matrons	Heads of Nursing/Mid	April 2007	Evidence to be incorporated into monthly reports
6.	Central line and Feeding Line Policy	Review will be undertaken by Graham Ramsay ▪ Central Line Policy ▪ Feeding Line Policy	Medical Director	Early 2007	Reviewed To be considered				
7.	Incorporate the NPSA RCA tool in Incident Investigation of MRSA bacteraemias	Gary Etheridge Robin Wiggins & Jiovanna Foley to agree implementation Plan	Chief Nurse DIPC Lead Nurse	Mid Nov '06	Mid Nov '06	Heads of Nursing Matrons IC Lead Nurse	Heads of Nursing Matrons IC Lead Nurse	Ongoing as RCA is used	RCA incorporating NPSA tool in place. Revised as appropriate
8.	Infection Control practice to be included in medical staff appraisals and KSF outlines	The medical staff trained appraisers will ensure that all medical staff appraisals will include Infection Control aspects of clinical practice	Medical Director	2007/08	Draft Produced Currently being piloted	Divisional Directors Associate Medical Director (Sarah Hill)	Medical Director		
9.	Infection Control practice to be included in nursing staff appraisals and KSF outlines	The nursing staff appraisers will ensure that all nursing staff appraisals include Infection Control practice	Chief Nurse	Commence Mid Nov '06	Letter sent to HoN/Matrons/Srs highlighting target	Heads of Nursing/Mid Matrons Clinical Leaders	Heads of Nursing/Mid	Ongoing	

No	Action	How it will be Achieved	Lead (s) Responsible	To be actioned by when	Actual date of Implementation	List of Individuals & Departments Involved in this Change	Reviewer	Date of Review	Evaluation/ Measures of Success e.g. no MRSA Bacteraemias in Augmented Care by December 2006
					Nov '06				
10.	Infection Control practice to be included in all job plans	Graham Ramsay in conjunction with Robin Wiggins Sarah Hill and HR Representative to ensure that all job plans include Infection Control practice in objectives	Medical Director	Commence Mid Nov '06		Divisional Directors Associate Medical Director (Sarah Hill)	Medical Director		

*Please cross reference this plan against the Trust's Winning Ways Action Plan

Plan devised on 10th October 2006
Ratified by the MRSA Improvement Team on 27th November 2006

Plan reviewed in December 2006
Plan reviewed in February 2007

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