The introduction of a ward-based medical team system within a General and Emergency Medical Directorate

Scott Reeves[1] & Simon Lewin[2]

with

Julienne Meyer[1] & Michael Glynn[3]

[1] *City University*
[2] *London School of Hygiene & Tropical Medicine*
[3] *Barts and The London NHS Trust*

Acknowledgements

Contents

Glossary

Board round	A daily round where nurses and doctors discuss patient progress and management in front of the board on which the names of all patients on the ward are recorded
Category A patient	Patients with a recognised specialist problem (e.g. respiratory illness) who have been triaged as 'obligatory' transfer to a specialist team
Category B patient	Patients with a suspected specialist problem who have been triaged as 'desirable' transfer to a specialist team
Category C patient	Patients with general medical problems who have been triaged as 'need not be transferred' to a specialist team
GEM	General and emergency medicine
FRT	Fast response team
HCA	Health care assistant
HO	House officer
LOS	Length of stay
MD	Multidisciplinary
MD discharge form	A record of actions completed by the different professions in relation to patient discharge.
MDT	Multidisciplinary team
NHS	National Health Service
RLH	Royal London Hospital
SHO	Senior house officer
TTA	To take away (medications for patients to take home after discharge)
WBMT	Ward-based medical team

Summary

This report presents findings from a two-year evaluation of the impact of introducing a ward-based medical team (WBMT) system into a general and emergency (GEM) Directorate based at the Royal London Hospital (RLH). Previous work indicated that the organisation of medical teams across many wards inhibited ward-based staff (e.g. nurses, therapists) from becoming fully involved with doctors' decision-making (e.g. Bridges et al 2001). A WBMT system was therefore introduced to promote effective collaboration by basing each medical team on one 'home' ward. A new system of triage was also introduced to ensure that patients were managed by the appropriate specialists.

Aims and methods

The aims of the evaluation were to explore the impact of the WBMT system on interprofessional collaboration and to assess the impact of this new system of work on the clinical service delivered to patients. A multi-method research design was used to develop a comprehensive understanding of the WBMT system. Questionnaire, audit, observational, interview documentary data were collected with practitioners, managers and patients before (Phase 1), one month (Phase 2) and nine months (Phase 3) after the introduction of the WBMT system.

Key findings

Phase 1: Doctors' work was spread across several wards, creating difficulties in communicating with ward-based staff and patients/relatives. The time spent by doctors moving between wards and by non-medical staff in attempting to contact doctors was seen as inefficient. Most interprofessional interactions on the wards were terse, with exchanges lasting only a few seconds. In addition, medical and nursing rounds tended to operate separately. While multidisciplinary team (MDT) meetings provided a regular forum for interprofessional communication, the poor attendance of doctors and nurses (due to competing commitments) often undermined their value. Consequently, communication was serendipitous in nature. Staff therefore relied on other means of information exchange, such as the patient notes. Patients reported high levels of satisfaction with both the organisation and delivery of care. Patient length of stay (LOS) was 9.5 days, the re-admission rate was 8.6% and outlyer rate was 20.9%.[1] The total number of bleeps received by registrars, senior house officers and house officers was 9,532.

Phase 2: The introduction of the WBMT system was regarded as successful with little interference to the clinical work of the Directorate. Observations suggested that the doctors were on their home wards for longer periods. Consequently, nurses and other staff felt they had more frequent interaction with doctors, contributing to better interprofessional rapport and more efficient and effective patient care. Interprofessional interactions remained terse. Medical and nursing rounds continued to operate separately and MDT meetings were still poorly attended by doctors and nurses. Information exchange therefore remained largely ad hoc in nature. Feedback of these findings to management contributed to the introduction of two new initiatives: a daily board round (a brief exchange between doctors and nurses about patient progress) and a new MD discharge form (to co-ordinate discharge). The new system of triaging patients to specialist medical teams was felt to have improved the quality of patient care. However, the loss of the hand-back system[2] and the (sometimes) inefficient transfer of patients between medical firms undermined continuity of care for some patients, especially those

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[1] These figures were not adjusted for seasonal variation in admissions or case mix.
[2] Patients who had been recently or regularly managed by a team were 'handed back' to that team.

with non-specialist conditions. Furthermore, the 'out of hours' bed management was problematic as staff did not always triage patients with specialise problems to the appropriate medical teams. Whereas patient LOS decreased to 8.7 days, patient satisfaction levels, re-admission and outlier rates remained largely unchanged. The number of medical bleeps fell to 7,641.

Phase 3: The early gains of the WBMT system were maintained: nurses and other non-medical staff reported a good rapport with doctors and continued to feel that the system was efficient and effective. However, it was found that medical decision-making could be slow because senior medical staff were often not available. The nature of interprofessional interactions on the wards remained unchanged. Medical and nursing rounds continued to operate separately and MDT meetings remained poorly attended by doctors and nurses. In addition, the new board round and MD discharge form were considered as having had a minimal impact on collaboration. Due to these continuing problems, it was felt that senior staff should be more visible in promoting interprofessional collaboration. It was also found that the patient triage problems continued to undermine the continuity of care for some patients and that the problems associated with the 'out of hours' bed management persisted. While the volume of medical bleeps again decreased (n=6,287), patient satisfaction levels, LOS, re-admission and outlyer rates remained constant.

Key conclusions

Overall, the move to the WBMT system has been successful. The WBMT system has:
- Increased the geographic proximity of doctors with other professionals, thereby making doctors more accessible and reducing the volume of medical bleeps.
- Promoted rapport and teamwork between directorate staff. However, there was little effect on ward-based interactions or the nature of MDT meetings or ward rounds.
- Improved patient care by triaging them to an appropriate specialist medical team. However, continuity of care between medical teams and the care of non-specialist patients remain problematic.
- Provided better access for patients/relatives to junior medical staff. Patient satisfaction with care remained high throughout the study. However, poor access at ward level to senior medical staff was seen to result in medical decisions being delayed.
- Contributed to the reduction (by one day) of patient LOS.[3] However, there was little impact on re-admission rates or on the number of outlying patients.

Key recommendations

- Interprofessional education, focusing on the principles of teamwork, may further enhance collaboration between professionals.
- More active promotion of collaborative initiatives (e.g. MDT meetings, board rounds) by senior managers could improve interprofessional working.
- Greater access to senior medical staff could increase the pace of medical decision-making on the wards.
- Further attention needs to be given to ways of improving the handover of patients between medical firms and the out of hours management of beds
- Further longitudinal research would be useful to assess the longer-term impact of the WBMT system.

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[3] A downward trend in patient LOS was identified prior to the introduction of the WBMT system. Therefore this change cannot be wholly attributed to this new system.

Introduction

This report presents findings from a two-year project to evaluate the impact of a new ward-based medical team (WBMT) system in the General and Emergency Medicine (GEM) Directorate of the Royal London Hospital (RLH). The project evolved from previous research undertaken in this directorate that examined the introduction of the new 'care co-ordinator' role (Reeves *et al* 1999, Bridges *et al* 2001). This work revealed that the traditional firm-based system of medical care inhibited ward-based staff (e.g. nurses, therapists, pharmacists) from becoming fully involved with doctors' decision-making on issues related to patient care. To promote more effective interprofessional interaction, a WBMT system was introduced. This study examined its effects on interprofessional collaboration and patient care.

Literature overview

The delivery of safe and effective care within the acute medical sector is complicated by a number of factors. These include: rising numbers of admissions; reductions in the number of acute care beds; financial pressures to reduce the length of patient stay; government pressure to produce and follow clinical guidelines; and a reduction of duties/hours of trainee doctors (Department of Health 1998, 2000a, National Audit Office 2000)

One of the main policy level responses to this complicated array of issues has been to stress the need for effective interprofessional teamwork (Department of Health 1997, 2000b, 2001). Indeed, an increasing body of research suggests that an improved service can be delivered to clients where skills, knowledge and experience are well co-ordinated between different professional groups (Zwarenstein *et al* 1997, Aiken *et al* 1998, Schmitt 2001, Rafferty *et al* 2001).

However, effective collaboration is a difficult goal to achieve. It requires attention to a number of factors, including: explicit and appropriate tasks and goals; feedback on performance; regular negotiation; clear, meaningful roles for each individual and clear leadership (e.g. West & Slater 1994, Firth-Cozens 1998, Zwarenstein & Reeves 2002). Where such factors are absent, the possible benefits associated with collaboration may be limited. Research has also indicated that effective collaborative practice may be further undermined where professionals share little time working together on wards (Allen 2002) or undertaking teambuilding activities (Opie 1997).

Local context

This evaluation was undertaken in the GEM Directorate of the RLH. GEM has responsibility for five general medical and one admissions ward and also has patients on several 'outlying' wards (wards belonging to other specialities) throughout the hospital. Twenty-two consultants contribute to the service. Patients admitted to the service have a range of emergency medical problems and are either treated through to discharge within the Directorate or transferred to a specialist medical team.

Before the introduction of the WBMT system, each medical firm retained most of the patients that they admitted on their 'take' days, regardless of the medical reasons for admission. For example, a patient with a respiratory illness might be initially admitted under a team within GEM specialising in gastro-enterology. On admission, patients would be clerked by a junior doctor and reviewed by a registrar from the 'take' team.

There was no standard system in use for structuring these clerking notes. Instead, they were written directly into the patient's folder.

Patients who had been recently or regularly managed by a team could be 'handed back' to that team. Where specialist input was required, for example from a gastro-enterologist or cardiologist, a formal referral would be made. The specialist team would then assess the patient and either recommend a management plan to be implemented by the admitting team or take over full responsibility for the medical management of the patient. Each medical team had a designated 'home ward' where their patients were to be given a bed after admission. However, patients were generally admitted onto any ward within general medicine where a bed was available, as well as onto a number of outlying wards outside of the GEM directorate[4]. Patients under the care of each medical team were therefore usually spread across a large number of wards.

This system was identified as having the following problems:
- The spread of each firm's patients across many wards resulted in long ward rounds; difficulties in medical teams getting to know ward-based teams such as the nurses and physiotherapists; and inefficiencies due to medical staff having to move between wards.
- Patients might not receive optimal care if they were admitted under a consultant from a speciality different to that of their admitting condition.
- The referral system resulted in delays in patients accessing specialist care.
- Clerking notes were difficult to read through quickly as no standard system was in use to structure these. Sometimes important information, such as the biochemical investigations requested, would not be written down in the notes.

The ward-based medical team system
Given the problems related to interprofessional collaboration and the organisation of care within GEM highlighted above, it was decided to introduce a new WBMT system into the Directorate. The new system was designed to address these problems. Its aims were:
- To improve co-ordination between ward-based medical teams and other ward-based health professionals.
- To assign a 'home' ward and outlyer ward to each team whereby the patients admitted onto those wards from the admission ward would 'belong' to that team.
- To initiate triage by consultants of new patient admissions into three categories according to their level of need for specialist medical care. These categories were: 'Obligatory' transfer to a specialist team (Category A); 'Desirable' to be transferred to a specialist team (Category B); 'Need not be transferred' to a specialist team (Category C).
- To ensure that patients triaged as 'obligatory transfer to a specialist team' were transferred to the appropriate team on the day following admission.
- To attempt to transfer to the appropriate specialist team as many as possible of the patients triaged as 'desirable that transferred to a specialist team'.
- To implement a structured clerking sheet that would be used by all medical staff for patients admitted on 'take'.

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[4] Patients admitted onto any of these outlying wards are known as 'outlyers'.

Methodology

A multi-method research design (Robson 1995) was adopted to ensure that a range of insights concerning the introduction of the WBMT system could be obtained. Questionnaire, audit, documentary, observational and interview data were collected with practitioners, managers and patients. To understand and track changes in the system over a period of time, data were collected in three main stages: before (Phase 1, June-September 2001), after (Phase 2, October-December 2001) and nine months following (Phase 3, June-August 2002) the implementation of the WBMT system.

To ensure that GEM staff were aware of this work, a series of introductory meetings were undertaken. This allowed researchers to inform staff about the aims and methods of this study and provided opportunities for staff to raise questions and concerns about the proposed research. Data were also fed back to directorate managers throughout the study. This ensured that they were kept informed about the 'bedding-in' process of this new system.

Aims

The aims of the research were:
1. To explore the impact of the WBMT system on the collaborative work and interprofessional relations of staff based within GEM.
2. To assess the impact of this new system of work on the clinical service delivered to patients based in the Directorate.

Sampling

To obtain an in-depth understanding of the new WBMT system, it was decided to focus the collection of observational, interview and questionnaire data upon a small number of wards within GEM. Two wards were selected in consultation with directorate managers. These wards were regarded as being similar to other wards in the Directorate in terms of their organisation of care. Data were collected from staff and patients based on these two wards.

To ensure that data collected on these two wards were representative of the GEM wards, a small amount of observational and interview data were collected from other wards. In addition, audit data (e.g. length of stay, readmission rates) and documentary data were collected on a directorate-wide basis to obtain a broader perspective of the impact of the WBMT system.

Data collection

An iterative approach to the data collection was adopted. Data collected in the earlier phases of the study were used to inform data collection strategies in the later phases of the study. As noted above, five types of data were collected during the study: observations, interviews, audit, questionnaires and documents.[5]

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[5] See Appendix 1 for information on the data collection tools employed in the study.

Observations

The observations aimed to understand the nature of collaboration in relation to the WBMT system. Observations on the two study wards focused on interactions between medical and non-medical (e.g. nurses, therapists, etc.) staff. Intraprofessional interactions were also noted. A 'marginal participant' role was adopted while collecting these data (Hammersley & Atkinson 1995). Researcher interactions with staff took the form of occasional, short verbal exchanges to clarify issues or raise questions. Neither of the researchers participated in delivering care to patients while on the wards. Observations were collected at various times of the day in order to identify temporal changes in the nature of ward work. These data were generally collected from the nurses' station as this was usually the central hub of ward activity. The physical layout of the wards meant that a number of interactions that took place out of sight, for example at the bedside, in ward corridors or in side rooms, were missed.

Short (1-2 hour) observations were collected from the other general medical wards within the Directorate to ensure that interprofessional interactions on these wards were not significantly different to those observed on the two study wards.

Observations were also undertaken of weekly multidisciplinary team meetings (MDT) (where patient care issues were discussed and discharge planning was undertaken) and monthly directorate management meetings. In total, approximately 90 hours of observations were made.

Interviews

Semi-structured interviews were undertaken with a variety of staff from both study wards to explore their views of collaboration in relation to the WBMT system. Over the three phases of the study, a total of 74 individual and group interviews were undertaken with the following staff: doctors; nurses; physiotherapists; occupational therapists; pharmacists; social workers; managers; care co-ordinators and FRT members.[6]

Where possible, staff were interviewed in small uniprofessional groups. To ensure continuity, the researchers attempted to interview the same members of staff throughout the three phases of the study. However, due to staff turnover, sickness or annual leave this was not always possible. Only one consultant declined to participate. All interviews were audio taped and transcribed in full before analysis.

Questionnaires

To understand patient perspectives of the WBMT system, questionnaires were collected from patients admitted to the two study wards. The researchers administered the questionnaires in the form of a short structured interview with patients. In total, 90 questionnaires were collected with patients (30 questionnaires in each phase of the study).

Agreement from nursing staff was obtained before approaching any patient. Only patients who were considered 'medically fit' and were ready for discharge were

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[6] See Appendix 2 for further details on the number of interviews undertaken.

approached. Each patient was asked a number of questions concerning their views on staff interaction and their satisfaction with the care they received.

Audit

To assess directorate-wide changes resulting from the introduction of the WBMT system, audit data on patient LOS rates[7], re-admission rates[8], outlyer rates[9] and medical staff bleeps were obtained over the duration of the study. The assumption underlying the collection of these data was that the introduction of the WBMT system would both enhance interprofessional collaboration and provide patients with direct access to specialist medical care. This, in turn, would lower figures in all four areas.

Monthly audit data on patient LOS rates, re-admission rates, outlyer rates were obtained from the audit unit of the Barts and the London NHS Trust for the 18-month duration of the study. Data on medical staff bleeps were obtained from the computerised records generated by the telephone exchange. These data covered three, three-month periods corresponding to the three phases of the study (i.e. nine months of data in total).

Documents

Documentary data in the form of minutes from directorate meetings and patient admissions records (from both study wards) were collected to obtain a further perspective on the nature of the impact of the WBMT system.

Analysis

Qualitative data

A thematic analysis of the interview data was undertaken. Both researchers, independently of one another, 'open coded' half of the interview transcripts to identify initial themes. The researchers then met to discuss these initial codes and begin building a joint coding frame divided into major themes and sub-themes. A substantial amount of time was spent discussing this part of the analysis to ensure synthesis. The interviews were then re-coded according to the agreed coding frame.

The observational data were analysed by identifying each inter- and intra-professional interaction and then identifying the professionals involved; by whom the interaction was initiated; the nature of the interaction; and its length. This allowed the researchers to establish the overall patterns of inter/intraprofessional interaction and to examine the content of each interaction event. The observational data were also used to develop a detailed picture of day-to-day interprofessional collaboration on the wards.

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[7] For the purposes of this study, a 'GEM patient' was defined as any patient admitted and discharged in the GEM Directorate over the period of the study. Patients were excluded if they were admitted directly into a superspeciality (e.g. renal) as they did not enter the WBMT system. Only patients admitted onto the five GEM wards and GEM patients on 'outlyer' wards were included. Patients discharged from the admissions ward were excluded as they did enter the WBMT system.

[8] Re-admissions were defined along NHS audit guidelines as those patients re-admitted within 21 days of discharge to any medical speciality as an emergency case.

[9] Outlyer figures were collected as a proportion of the total number of patients admitted into GEM.

Quantitative data

Descriptive statistics were used to present the audit and patient data. In addition, simple regression was used to assess changes in patient LOS data over time. Paired t-tests were used to assess the differences in the number of medical bleeps recorded over the three phases of the study.

Quality issues

A number of methodological techniques were employed to ensure that the study obtained good quality data. These included:

- Combining interview and observational data to enrich insights.
- Using other data sources such as medical staff pager records to triangulate findings.
- Adopting an iterative approach to data collection to ensure that issues identified in the earlier stages of the project could be further probed in later stages.
- Feeding back preliminary analysis to staff and employing their responses to inform the subsequent work.
- Presenting findings for scrutiny and critical examination to a project steering group consisting of experienced researchers and health professionals.
- Reflecting on the researcher role and considering how this might have impacted on data collection and interpretation.

Ethical considerations

Ethical approval was obtained from the Local Health Authority Research Ethics Committee before the study commenced. Both staff and patient informants were provided with written information sheets on the study and on their right to withdraw from the interview at any time. They were then asked to give written consent to interview. Each team of ward staff gave permission for observations to be undertaken on their ward. Furthermore, to ensure that staff and patients were aware of the research, posters detailing the study were displayed in the Directorate. In addition, as noted above, researchers met with staff before the study commenced to outline the study and answer questions. All data were treated as strictly confidential and were stored securely. The anonymity of informants was maintained by using generic descriptions, such as 'house officer', 'staff nurse' or 'manager' in all written reports.

Research team

The evaluation was undertaken by Scott Reeves (Research Fellow, City University), and Simon Lewin (Lecturer, London School of Hygiene and Tropical Medicine). SR has a social science background and SL has a medical background. Both researchers share an interest in medical sociology and have experience in health services research (e.g. Reeves *et al* 2002, Reeves 2001, Lewin *et al* 2003, Sanders *et al* 1998).[10]

The evaluation was guided by input from an interprofessional, international steering group that consisted of managers, clinicians and academics:

- Michael Glynn (physician and clinical director, GEM)
- Julienne Meyer (Professor of Nursing, Care for Older People, City University)

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[10] Other information on this research project can be found in Appendix 3.

- Judith Green (Senior Lecturer, London School of Hygiene and Tropical Medicine)
- Linda Griffiths (Physiotherapy Manager, GEM)
- Louise Crosby (Head Nurse, GEM)
- Jackie Bridges (Research Fellow, City University)
- Merrick Zwarenstein (Senior Scientist, Institute for Clinical Evaluative Sciences, Toronto, Canada)

Findings

Findings are presented and discussed in three main parts. Initially, baseline findings from Phase 1 (prior to the introduction of the WBMT system into GEM) are presented. Secondly, findings collected after the implementation of the new system (Phase 2) are outlined. Finally, the report presents findings collected nine months after the implementation of the WBMT system (Phase 3).

Phase 1: Baseline perspective

The first part of the report presents findings in three sections: 'Interprofessional collaboration'; 'Patient care' and 'Expectations of the new system'

Interprofessional collaboration

This section of the report, focusing on the nature of interprofessional collaboration within GEM, is divided into five sub-sections: 'Collaboration on the wards'; 'Staff experiences of collaboration'; 'Multidisciplinary ward meetings'; 'Patient experiences of collaboration'; and 'Medical team activity'.

Collaboration on the wards

Sharing information and planning patient care with other health care providers was observed to be an important element of the work of professionals on GEM wards. The extract below, collected over approximately a 20-minute period, illustrates a typical scene on a GEM ward:

> *A senior-looking doctor comes into the ward and asks who is in charge. A junior nurse says, 'I am'. 'Oh', he replies in an imperious tone, 'I would like to speak to a staff nurse'. He then talks to one of the staff nurses about the transport required by a patient who is going for a procedure outside of the hospital. […] A junior doctor comes into the ward and goes to the bedside of one of the patients. She then goes to fetch some syringes and goes back to the bedside to take blood specimens. This takes about 15 minutes. She checks the specimens, tells a staff nurse that they can 'go up'* [to the laboratory] *and goes back into the patient bay. A few minutes later she comes out and writes some notes at the nurses' station. A few minutes later another junior doctor comes into the ward, goes to the nurses' station and asks for urgent bloods to be collected. He then hangs about waiting for a call that will let him know where his ward round is. He then leaves the ward. At the same time, one of the staff nurses is trying to help a person who is looking for a relative who was moved from the admissions ward to another part of the hospital. A dietician comes to the nurses' station and asks this nurse some questions about a patient's eating. The dietician is checking up after seeing the patient the previous day. She makes a note in the folder and chats to the nurse about future care with regard to eating* (field notes).

This extract highlights a number of facets in the nature of ward-based collaboration in Phase 1 of the study:

- Interprofessional interactions were short, largely unstructured and often opportunistic. If a professional had a query, s/he would usually look around the ward for another professional who might be able to answer it. If the appropriate professional was found, the two might have a brief discussion and then continue with their other tasks.

- The wards were very busy. At any one time, a number of people, including relatives and friends of the patients as well as staff from other units within the hospital, could be entering or leaving. Staff were also consulting with patients; undertaking ward rounds and minor procedures; completing paperwork; dealing with telephonic and verbal enquiries from other professionals, patients and relatives; arranging interventions for patients; cleaning the ward and making beds; serving food and drink; and attending to the care needs of patients.
- The number of professionals working on a ward at any one time is large: it may include up to 15 doctors (from five or six different medical teams), five-to-six nurses, four-five HCAs, three to four therapists, two social workers, a pharmacist and two care co-ordinators.

Another idea of the nature of ward-based interprofessional collaboration is provided in Table 1. This summarises the frequency of interprofessional interactions collected from the two study wards.

		Interaction Initiated by								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with	D		21	2	1	7				
	N/HCA	62		9	5	10	2	4	1	1
	Pharm		1							
	FRT	1				1				
	CC	3	1						1	
	OT	1				1				
	PT	3	2							1
	SW	1								
	Clerk	8	1	1	1		1			
	Subtotal	79	26	12	7	19	3	4	2	2
	Total number of interactions: 154									

Table 1: Summary of interprofessional interactions on the study wards in Phase 1

Key: D (doctor); N/HCA (nurse/health care assistant); Pharm (pharmacist); FRT (fast response team); CC (care co-ordinator); OT (occupational therapist); PT (physiotherapist); SW (social worker); Clerk (ward clerk).

As Table 1 illustrates, the most frequent interprofessional interactions on the wards, accounting for 54% of all interactions, were between nurses and doctors (mostly house officers and senior house officers). A large proportion of these nurse-doctor interactions were initiated by doctors (75%), who also initiated the largest number of interactions overall (51% of the total number of interactions). Care co-ordinators and pharmacists were responsible for initiating a substantial number of interactions, mainly with nurses.

Observations revealed that most doctor-nurse interactions were terse and were focused on giving instructions or sharing information:

> *A house officer asks the charge nurse, who is busy with the task of wheeling a commode through the ward, for a dynamap machine. She tells him to ask the nurse on the male side* (field notes).

In contrast, nurse-initiated interactions were concerned with information sharing/gathering. Interactions that involved therapists, pharmacists, social workers and care co-ordinators were generally friendlier and less rushed, and often involved a more in-depth discussion of patient care:

A nurse and a physiotherapist have a discussion over a patient – the physiotherapist explains problems she is having with a patient - I am just out of earshot so cannot hear the details of this conversation. The exchange lasts for a good ten minutes. I am struck by the depth and length of this discussion in relation to other interprofessional discussions. These are, in contrast, far briefer (field notes).

Staff experiences of collaboration

In general, it was felt that the traditional system of care, whereby medical teams regularly cared for patients in a number of different GEM wards, created problems for interprofessional collaboration. Nurses, therapists, pharmacists, care co-ordinators and social workers all reported difficulties communicating with the doctors:

"Doctors are scattered around different …[medical] *wards, so we don't see each other for days* (occupational therapist).

In addition, it was felt that the large number of medical teams moving around the directorate at any one time further inhibited communication:

"There are so many doctors… that it makes it extremely difficult for communication… you don't know who they are and half the time... you may bleep them and they have just been [to the ward] *and you haven't seen them and they haven't spoken to you"* (charge nurse).

The lack of time for regular, sustained communication was seen to result in poor rapport between doctors and other staff:

Pharmacist 1: *"You might be able to form a relationship with five or six of them who we know quite well but there are a whole host of others who we keep thinking, who we don't know, so we still have to be quite formal with them"*
Pharmacist 2: "*And you know that keeps things quite impersonal really".*

Furthermore, for some doctors, this lack of interpersonal contact with the different members of the ward team undermined the need for individual commitment to developing or sustaining positive interprofessional relationships:

"This way [of working under the traditional system of care] *is kind of non-committal. You are here and then you are not. You are not forced to work in the same environment with them* [nurses, therapists]*. You can come and go you. The level of the relationship you have is, it doesn't have too much significance"* (house officer).

In the absence of regular face-to-face contact with the medical teams, ward-based staff (e.g. nurses, therapists, etc) used the hospital bleep system to initiate communication. As Table 2 indicates, doctors working across GEM received 9,532 bleeps in this phase of the study.[11]

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[11] See Appendix 4 for a detailed breakdown of bleep data.

	Registrars (n=13)	SHOs (n=8)	HOs (n=16)
Number of bleeps	2,638	1,793	5,101
Total	9,532		

Table 2: Number of bleeps received by doctors in Phase 1

Another mechanism employed by staff to overcome interprofessional communication difficulties was the use of the hospital corridors for informal information exchange:

> *"Informally we catch up on the corridor… informally speak to physios and OTs and social workers, so there is good group contact there"* (house officer).

In addition, staff reported that they often wrote in patients' notes when they could not speak directly to a particular professional. However, this method of communication was considered problematic as these notes often contained too little information for effective communication.

It was also reported that nurses and care co-ordinators were regularly used to pass information between professional groups, particularly doctors and therapists. Again, this route for communication was regarded as potentially problematic, particularly as staff could forget to pass on information:

> *"Medical teams are going from ward to ward so the communications tend to be via nurses and other factors inevitably lead to the breakdown of communication from time to time... for example patients being discharged without physio planning in place"* (manager).

A large proportion of the doctors' communication with nurses was through the ward charge nurse:

> *"If they* [the doctors] *see me, I will be the first person they will go to… they will walk past all the staff nurses to get to you"* (charge nurse).

Charge nurses noted that this was not appropriate as each patient had their own assigned nurse who was most familiar with their condition and progress and would therefore be best placed to discuss their care with the doctors.

Doctors (and some of the nurses) regarded medical ward rounds as a vital mechanism for doctor-nurse communication. However, most nurses tended not to attend them, citing pressures of work, the high number of medical teams working on the wards and the irregularity of medical rounds as the main reasons for the lack of nursing presence.

Staff also identified a number of wider factors that inhibited good interprofessional collaboration within the Directorate. These included:
- The logistical difficulties of working within a large, multi-sited organisation employing hundreds of staff;
- On-going training rotations resulting in a continuous turnover of staff;
- Poor staffing levels (particularly in relation to nursing) due to recruitment and retention difficulties;

- A continuously high demand for the Service from a socially and economically deprived local population. This demand resulted in staff being focused on work tasks rather than collaboration with other professionals.

Multidisciplinary team meetings

One regular mechanism for interprofessional communication and information exchange was the weekly MDT meeting. These meetings allowed the nurses, occupational therapists, physiotherapists, social workers and care co-ordinators working with each medical firm to update one another, discuss the progress and problems with patient care and plan patient discharges.

MDT meetings generally lasted for around 30 minutes and provided staff with time away from the frenetic environment of the wards. The following extract describes a typical meeting:

> *The meeting starts at 11.50 after a five-minute wait for the doctors. Six people are here: a care co-ordinator, an occupational therapist, a physiotherapist, two doctors (registrar and HO) and a social worker. The meeting starts after the care co-ordinator circulates a list of patients. The registrar 'leads' the meeting, going through each of the patients on the lists and outlining their conditions and progress. Other members then raise any queries they have about the patient (e.g. whether TTAs are ready, if transport has been set up, if the patient requires referral to occupational therapy, physiotherapy or social work). Overall, there is good interprofessional exchange between participants throughout the meeting. All members contribute to the discussion* (field notes).

With the lack of regular ward-based communication, weekly MDT meetings were considered a key mechanism for interprofessional interaction:

> *"Those* [MDT] *meetings are really important. That's when we find out… the nitty gritty of what is actually wrong with them* [patients]*"* (social worker).

However, it was found that doctors and (more often) nurses regularly failed to attend MDT meetings. Nurses cited heavy workloads combined with a shortage of staff as the reasons for their non-attendance. For the doctors, especially senior doctors, the nature of their duties meant that they were often working in other parts of the hospital or undertaking ward rounds or clinics during the time scheduled for MDT meetings. A number of staff raised poor attendance by senior medical staff as a particular problem as their absence meant that decisions on patient discharge could not to be taken.

Patient experiences of collaboration

Questionnaire data collected from patients indicated that most considered that staff worked well together on the wards, treated one another with respect and generally kept each other informed about changes to their care plans. Patients also indicated that they seldom received conflicting advice about their care from different staff on the wards (see Table 3).

Questionnaire item	Number (%) of patients agreeing with statement
Staff treated one another with respect	30 (100%)
Staff worked well together	23 (93%)
Staff informed about changes to care plans	25 (83%)
Received conflicting information from different staff	3 (10%)

Table 3: Patient views of collaboration in Phase 1

Medical team activity

As previously noted, although each medical team had a designated 'home ward' where their patients should have been given a bed after admission, patients were generally admitted onto any ward within GEM where a bed was available, as well as onto a number of outlying wards outside of the Directorate. Patients under the care of each medical team were therefore usually spread across a large number of 'non-home wards'. This situation is indicated in Table 4. As this table reveals, while both study wards should only care for patients from their home ward teams, they often admitted patients from several other medical teams.

Month	Number of 'non-home ward' medical teams with patients on study wards	
	Study ward 1	Study ward 2
Apr 01	9	10
May 01	8	11
June 01	10	10
July 01	5	9
Aug 01	10	11
Sept 01	10	9

Table 4: Number of 'non-home ward' medical teams with patients on the two study wards in Phase 1

Patient care

This section of the report discusses the nature of patient care within GEM before the introduction of the WBMT system and is divided into three sub-sections: 'Staff perspectives', 'Patient satisfaction' and 'Audit data'.

Staff perspectives

Staff agreed that the traditional system of care, whereby medical teams looked after patients who were spread across a number of different GEM and outlyer wards, made the delivery of patient care difficult for a number of reasons. For example, the process of care and patient discharge was sometimes inefficient as information was not always communicated in a timely fashion:

> "Our team gets told, 'oh that patient is being discharged today' and I won't have got to see them and I won't have time to see them, but that patient will still get discharged" (physiotherapist).

In addition, a number of staff noted that patients often had to wait for long periods before they were seen by a doctor:

> *"Quite often the relatives ask the nurses to see a doctor… they then have to wait a couple of hours… obviously, that agitates them"* (care co-ordinator).

It was pointed out that this problem generated a large number of complaints from patients and their relatives.[12]

It was also felt that medical care could often be poorer for patients who were based on outlying wards as these wards were not well equipped for GEM patients:

> *"The trouble is we often have medical patients on surgical wards, on gynaecology wards or orthopaedic wards and there is an entirely different philosophy of care... to get something like a peak flow measurement is something they don't even have the equipment, understandably"* (registrar).

In addition, a number of staff acknowledged that the under the traditional system of care patients could be disadvantaged as those admitted with specialised problems (e.g. respiratory illness) were not always looked after by the appropriate specialist team. Rather, they were managed by the admitting team (whatever its speciality) who then consulted with the specialists as appropriate.

Nevertheless, many of the doctors felt the traditional system of care provided patients with a good continuity of care as one medical team would look after a patient throughout their stay in the Directorate:

> HO: *"You are seeing the patients you admitted… you take them through the course of their illness and then you discharge and you see the whole."*
> HO: *"Yes… good continuity of care"* (house officers).

Indeed, as previously noted, to ensure this continuity, patients re-admitted into GEM were 'handed back' to the medical team who had previously managed their care.

Finally, it was acknowledged that the poor physical condition of some of the wards within GEM could provide a negative experience for patients and their relatives.

Patient satisfaction
Patient satisfaction with their care on the wards was high. Patients indicated that they were generally able to speak to a health professional whenever they needed to and received all the information they required. However, they indicated that it was easier to speak to a nurse when they needed to than to a doctor. Patients also felt that staff were willing to listen to them and to answer any questions that they might have. Overall, patients felt that their needs were well met by the staff on the wards (see Table 5).

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[12] Efforts to obtain data on patient complaints were unsuccessful at time of writing.

Questionnaire item	Number (%) of patient agreeing with statement
Able to speak to doctors	20 (67%)
Able to speak to nurses	28 (93%
Doctors willing to answer questions	27 (90%)
Nurses willing to answer questions	26 (87%)
Needs well met by doctors	26 (87%)
Needs well met by nurses	27 (90%)
Needs well met by other staff (therapists, etc)	21 (70%)

Table 5: Patient satisfaction levels in Phase 1

Audit data

To gather an initial perspective on the wider nature of clinical work within GEM, audit data on patient length of stay, readmission and outlyer rates were obtained.[13] As Table 6 indicates, the average length of a patient's stay in GEM was 9.52 days in the six months prior to the introduction of the ward-based system.

Month	Number of days
Apr-01	10.43
May-01	10.19
Jun-01	9.96
Jul-01	8.94
Aug-01	9.11
Sep-01	8.49
Overall average	9.52

Table 6: Average length of patient stay in GEM in Phase 1

In this period, 8.6% of the total number of patients (n=3,052) discharged from the Directorate were re-admitted within 28 days (see Table 7).

Month	Number of Discharges	Number and (%) of re-admissions
Apr-01	492	49 (10.0)
May-01	549	55 (10.0)
Jun-01	494	37 (7.5)
Jul-01	535	41 (7.7)
Aug-01	505	46 (9.1)
Sept-01	477	35 (7.3)
Totals	3,052	263 (8.6)

Table 7: Patient re-admissions (within 28 days) in Phase 1

As Table 8 indicates, 1,107 GEM patients were based on outlying wards in this phase, representing a 20.9% outlyer rate.

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[13] These figures were not adjusted for seasonal variation in admissions or case mix. As previously noted these data represent only patients admitted onto the five GEM wards and GEM patients on 'outlyer' wards. Patients discharged from the admissions ward were excluded as they did enter the WBMT system.

Month	Number of patients on GEM wards	Number and (%) of patients on outlying wards
Apr-01	871	254 (29.2)
May-01	873	207 (23.7)
Jun-01	874	151 (17.3)
Jul-01	910	159 (17.5)
Aug-01	884	176 (19.9)
Sep-01	877	160 (18.2)
Total	5,289	1,107 (20.9)

Table 8: Number of patients on GEM and outlying wards in Phase 1

Expectations of the new system

In general, staff welcomed the introduction of the WBMT system. Indeed, the small number of staff who had previously worked within ward-based systems (in other hospitals) were among its greatest advocates. This section explores staff expectations of the WBMT system in three sub-sections: 'Collaboration', 'Patient care' and 'Profession-specific issues'.

Collaboration

Staff recognised the limitations for interprofessional collaboration of the traditional system of care and generally viewed the prospect of the WBMT system in a favourable light. Most felt that the locating of medical teams with nurses, therapists, pharmacists, social workers and care co-ordinators would improve interprofessional communication and collaboration:

> "It [the WBMT system] *gives the medical team a better opportunity to get to know one team of nurses rather than, you know, trying to interact with nurses on ten different wards. If you are based on one ward mainly then you actually have more of a rapport with the team there, so that could be an advantage"* (registrar).

It was also suggested that the WBMT system could help deliver a more efficient service as nurses, therapists and other staff would have to spend less time attempting to contact the different medical teams. In addition, doctors' time would be used more efficiently as they would need to spend less time travelling between wards to treat their patients.

Patient care

It was felt that the more rapid provision of appropriate specialist medical care would enhance the quality of care for patients:

> "The management of certain conditions can be sped up by them being looked after by specialist teams as opposed to non-specialist teams who might take a bit longer to get access to the relevant investigations" (SHO).

Furthermore, it was agreed that the new system could also improve continuity of care by locating medical teams with the other staff groups:

> "I would hope that it [the WBMT system] *would give greater continuity of care to the patients with having one team based in the actual ward. They would get to*

know those particular patients more thoroughly. They would have day to day contact with and so would understand the changes in their needs" (manager).

However, others suggested that the new system could potentially undermine continuity of care for some patients. In attempting to get patients to *"the right ward"* (registrar) for specialist medical team care, patients might be subjected to multiple moves within the Directorate. A number of staff also noted that the high demand for a limited number of beds within GEM would mean that patients would still be required to 'lodge' on outlying wards where, it was felt, the quality of medical care was not as high as it was within GEM. Despite these possible disadvantages, most informants adopted a wait-and-see attitude to the prospect of the new system:

> *"Unless we try it and try and make a go of it we will never know… if this works it could be an important way of improving patient's care and of improving efficiency. If it fails we just go back to what we have done before"* (consultant).

Profession-specific issues

Some concerns about the new system were profession-specific. For example, some of the doctors felt that the new system could create imbalances between medical teams. In particular, specialist teams with high numbers of patients with specialist problems (Category A patients) could concentrate on these, whereas teams with smaller numbers of such patients would be left with large numbers of general medical conditions (Category C patients). It was felt this situation might lead to tension between teams.

Several of the doctors, especially the junior staff, were concerned about the prospect of a change in the nature of their workload from one of 'peaks and troughs' of patient admissions to one where they would need to manage a more constant workload:

> *"*[Currently] *we have really busy times compensated by quieter times and I really appreciate it. Now if we had a ward-based system we have a more constant level on the busyness and lose the quieter periods"* (house officer).

Doctors also noted that the new system would reduce the informal networks they had developed with their medical colleagues through meeting them between and on other GEM wards. In addition, many were concerned that caring for large numbers of Category C patients (with general rather than specialised medical needs) would limit their opportunities for learning during their GEM rotation. Several of the junior doctors were also concerned that being based on one ward would result in more interruptions while undertaking their work as they would be more accessible to both other staff and patients. Furthermore, some were worried about the effects of being based on a 'bad' ward:

> Doctor: *"I suppose some people* [junior doctors] *are worried as well, that some wards are more efficient than others and if you are just based on one ward"*
> Doctor: *"You could get a bum deal and you are stuck with it"* (house officers).

Nurses felt that more direct access to their 'home ward' medical teams would reduce their workloads by reducing the time spent attempting to contact the large number of medical teams with patients on the ward:

> *"It should cause us a lot less work… we do spend an awful lot of time working out who is the patient under, let's read the notes, let's find the bleep number… So it should be a lot quicker and a lot less time on the phones"* (staff nurse).

Mixed feelings were also expressed about the impact of the WBMT system on the nurses' clinical learning. Some nurses were concerned that the change from general nursing care to providing specialist care might have a *"de-skilling"* (charge nurse) effect, while others looked forward to the prospect of developing their skills in one area of nursing, such as respiratory care.

The therapists, especially the occupational therapists, felt that the closer contact with doctors, nurses, physiotherapists and social worker under the new system would result in their contribution to patient care being better understood:

> *"I would like think that our role would be more identifiable… I know that people have a bit of trouble with knowing exactly what an OT does sometimes…* [under the new system colleagues] *would be able to identify us and get better understanding of the OT role because they would feel more comfortable talking to us"* (occupational therapist).

It was noted that a better understanding of the therapists' role might result in more appropriate and better targeted referrals from medical and nursing staff. However, it was pointed out that both the occupational therapists and physiotherapists did not have sufficient staff to allocate one to each ward. They would therefore still be required to cover at least two wards.

Phase 2: Post-intervention

This part of the report presents findings from the second phase of the study, following the introduction of the WBMT system. The findings are presented in four sections: 'Interprofessional collaboration'; 'Patient care'; 'Triage issues' and 'Profession specific issues'.

The consensus was that the introduction of the WBMT system had gone smoothly given the complexity of changes required. Indeed, the service had continued to operate through the introduction of the changes without major problem:

> *"The fact is the system is now up and running. We haven't had to abort it, we haven't had to go back to where we were before; we haven't had to make any major changes in what we planned. So essentially the planning does seem to have been right and the system is at least workable. It is working"* (manager).

Interprofessional collaboration

This section discusses the initial impact of the WBMT system on interprofessional collaboration within GEM. Five aspects of collaboration are considered: 'Collaboration on the wards'; 'Staff experiences of collaboration'; 'Multidisciplinary ward meetings'; 'Patient experiences of collaboration'; and 'Medical team activity'.

Collaboration on the wards

Sharing information and joint planning of patient care continued to be an important element of the work of professionals. Observations of interprofessional collaboration

on the wards revealed that there were fewer doctors moving through each ward with most being based on their home ward for long periods of time. This made access to junior doctors easier for nurses, pharmacists and other staff, and appeared to improve information sharing:

> *A specialist team calls the ward to check why a patient whom they had been expecting had not been transferred to them. The charge nurse responds that she has not heard anything about this transfer. She says that since they are now ward based, she would have heard about it from the medical team but they had not said anything to her* (field notes).

The increase in communication between professionals is perhaps reflected in the table below (Table 9). This shows that the number of interprofessional interactions rose by 13% following the introduction of the WBMT system,[14] perhaps indicating that professionals had more opportunities to face-to-face communication and therefore relied less on bleeping. Indeed, the number of bleeps received by doctors decreased over this period, as discussed later in this section. While the number of nurse-doctor interactions remained similar to Phase 1, the number of nurse-initiated interactions increased.

		Interaction Initiated by:								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with:	D		17	3	1	5	2			4
	N/HCA	44		9	3	8	4	12	1	5
	Pharm	2	7			1		1		1
	FRT	2	1							
	CC	1	1		2			2		
	OT		3	1		2		1	1	1
	PT	1	3			2				1
	SW		1							
	Clerk	7	8	1		1	1			
	Subtotal	57	41	14	6	19	7	16	2	12
	Total number of interactions: 174									

Table 9: Summary of interprofessional interactions on the study wards in Phase 2

Key: D (doctor); N/HCA (nurse/health care assistant); Pharm (pharmacist); FRT (fast response team); CC (care co-ordinator); OT (occupational therapist); PT (physiotherapist); SW (social worker); Clerk (ward clerk)

Table 9 also shows that doctors and nurses together initiated the largest number of interactions with other professionals, constituting 54% of all interactions. Doctors initiated the largest proportion (32%), followed by nurses (23%) and care co-ordinators (10%). Most of the interactions initiated by doctors were with nurses (76%). However, only 40% of all of the interactions initiated by nurses were with doctors as nurses initiated larger number of interactions with other professional groups, particularly pharmacists and clerks.

Interactions with nurses (by other professionals) constitute the largest group of interactions, accounting for 49% (n=86) of all interactions. This perhaps indicates the centrality of nurses to the management of care on the wards. The significant number of interactions initiated by care co-ordinators, particularly with nurses and doctors, also indicates their importance to communication on the wards.

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[14] See Appendix 4 for observation tables from all phases of the study.

While doctors initiated the largest proportion of interactions (32%), only 17% (n=32) of all interprofessional interactions were initiated with doctors. Doctors were therefore more likely to initiate interactions than to be the recipient of them, perhaps suggesting that interprofessional interactions involving doctors focused on doctors giving orders or information to others rather than receiving information or orders themselves. In contrast, nurses were the recipients of far more interactions than they initiated (n=86 vs n=41).

The increase in the number of interprofessional interactions was not accompanied by any significant changes in the nature of these interactions. In particular, nurse-doctor interactions remained brief and task-oriented and seldom included any social content:

> *The charge nurse asks a passing doctor, 'Are you looking after patient X?'. The doctor says, 'No, so-and-so is'. The charge nurse then asks, 'What's his bleep number?' The doctor gives it and goes on* (field notes).

Staff experiences of collaboration
The introduction of the WBMT system was welcomed by the vast majority of staff. Staff felt that the previous problems associated with numerous medical teams working on each GEM ward had been resolved. Overall, it was felt that the nurses, therapists and other staff now had better access to the medical teams as the doctors were on their 'home wards' for much longer periods:

> *"Generally I think it works quite well and it is easier to get doctors. The doctors do see the patients a lot more"* (charge nurse).

In general, nursing, therapy and other staff reported much better levels of interprofessional communication with the medical teams following the introduction of the new system:

> *"Information flows a lot better because you will mention something in passing, 'Oh, I have just done this for Mrs So & So and she did this or she did that'… I think that aspect is a lot better… it is actually making the whole team more efficient… communication is freely flowing"* (care co-ordinator).

For many staff, another of the advantages of the new system was that it reduced the time spent trying to contact members of different medical teams who were caring for patients on their ward. As one of the nurses pointed out, *"you are not chasing people… wasting your time bleeping doctors"* (charge nurse). Furthermore, for nursing, therapy, pharmacy, social work and other staff, the increased accessibility of the medical teams meant that their interprofessional relationships were improving:

> *"I think it has gone really well in that the doctors are around… You build up a rapport when you talk to them face to face much more, rather than bleeping them. I have noticed that I am certainly being asked a lot more questions now because obviously they are getting to recognise me and know that I am on the ward quite a lot, like so, getting invited to go on the ward rounds and things when they are just going round quickly which is really, really good"* (pharmacist).

The medical staff reported similar experiences:

"It is easier to talk to people and to, you know, if you want to just say something, when you want to grab an OT or a physio, then it is easier to find them" (house officer).

The improved access to and communication with the medical teams appeared to have a positive effect on the number of times that medical staff were bleeped. Bleep data collected for this phase of the study reveal that the total volume of bleeps over a three-month period was 7,641 (see Table 10). This represents a decrease of 1891 bleeps (19.8%) from the Phase 1 total of 9,532 bleeps (p = 0.0001).[15]

	Registrars (n=13)	SHOs (n=8)	HOs (n=16)
Number of bleeps	2,383	1,419	3,839
Total	7,641		

Table 10: Number of bleeps received by doctors in Phase 2

Ward observations support these findings:

After half an hour of collecting observations on X Ward [Study Ward 1] *I hear my first bleep of the day. It then strikes me that the ward is quieter than before with significantly less bleeps… This is quite a different situation from the last time I was on the ward before the WBMT system was introduced when you could heard the almost continual sound of bleeps* (field notes).

In contrast, a small number of doctors felt that the introduction of the ward-based system had not noticeably affected their relations with other staff. For these doctors, their interprofessional relations had remained as good as they were prior to the intervention:

"We always try to have a good working relationship with the allied staff, the nurses and the OTs we always had that – we worked to have that. The good working relationship is irrelevant whether we have a ward-based system" (house officer).

A few other informants, notably the nurses, also reported that their relationships with the doctors were unchanged. However, these staff described their relationship with doctors in poorer terms:

"Sometimes I think they [doctors] *just come onto the ward and walk round and walk off and don't speak to any of the nursing staff at all"* (staff nurse).

Staff also noted a number of minor difficulties associated with the new system. For example, many of the junior doctors complained that being based on a single ward for longer periods of time had meant that their work was frequently *"interrupted"* (house officer) by non-medical staff members, patients and relatives. The fact that each medical team was now spending more time on a particular ward also highlighted the shortage of working space for doctors:

"Interestingly in two wards the doctors have suddenly said, 'we haven't really got anywhere to sit…' while doctors and nurses always mingled in the same space,

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[15] See Appendix 4 for a detailed breakdown of bleep data from all phases of the study.

now that it is the same doctors mingling all the time, rather than a chain of them, they sort of feel, the conflicts seem more real… So both are saying, 'can't we find a doctors office, please?" (manager).

In response, a charge nurse complained that the doctors had begun *"taking over"* (charge nurse) the space designated as a nurses' tearoom on her ward.

Despite fewer medical teams on the ward, some of the doctors continued to note that nurses did not join medical ward rounds:

"We still have the same problem. We can't get nurses on ward rounds. There are only two consultants at most, two teams that work here… I am still doing a ward round and looking round to get a nurse to come on the round" (house officer).

A lack of time and the irregularity of rounds were again cited as the reasons for nursing non-attendance. Nevertheless, one of the charge nurses suggested that, following the introduction of the new system her staff were beginning to value these rounds:

"[Nurses] are much keener now to go on ward round because we know they that it is going to be worth it… Now it is much more of a team effort… so there is a lot more joint planning of what is happening with people and I think the nurses are generally a lot more aware of what the plan of action is for all the patients" (charge nurse).

Interestingly, while it was felt that the new system had increased the geographic proximity of professional groups, respondents still noted the central role of the care co-ordinators in supporting interprofessional communication:

"Our care co-ordinator plays a massive role with our patients because she is the one who brings everyone together and communicates between all the social workers, OTs, us, other hospitals" (house officer).

Two of the charge nurses suggested that many doctors still tended to communicate primarily with them. However, some improvement had occurred and, increasingly, doctors were communicating with other members of the nursing team. In addition, there was still a feeling among many staff that collaboration within GEM was still operated on an informal *"ad hoc"* (pharmacist) basis. Informants suggested that there was little time for planned collaborative work, except during their weekly MDT meetings.

Feedback of these findings to directorate managers facilitated the introduction of two new initiatives designed to enhance interprofessional collaboration between staff:
- A daily 'board round' (where doctors and nurses would stand at the board on which the names of all patients on the ward were written and briefly update one another).
- A new multidisciplinary discharge form (a record of the actions completed by the different professions in relation to patient discharge).

The impact of these two new initiatives on collaboration is described in the final section of this report.

Multidisciplinary team meetings

Informants continued to place a high value on the role of MDT meetings in supporting a collaborative approach to their work. Indeed, a number of informants felt that the *"team atmosphere"* (charge nurse) had improved within these meetings since the introduction of the new system:

> *"[MDT] meetings are becoming a lot more useful than what they were... last week we did sit in the meeting for two hours... You come out of there and you can feel you are much more able to go and speak to the doctors through out the week because you have sat down with them for that length of time and actually bonded together a bit more really. Rather than if you are in MDT meetings and they quickly run through every one and walk out"* (physiotherapist).

However, while staff felt that the 'quality' of the MDT meetings had improved, observations revealed that their length and content were unchanged. Furthermore, it was found that medical and nursing attendance at these meetings remained poor. Again, doctors cited competing workloads (e.g. clinics) as the reason for their non-attendance. Consequently, a number of staff continued to complain that the absence of senior medical staff meant that important decisions on patient discharge could not be taken at these meetings.

Nurses argued that they were unable to attend because of their heavy workloads. In addition, one of the charge nurses felt that poor attendance was also due to a feeling among junior staff that their opinion tended to be *"under valued"* (charge nurse) by some of the doctors. The care co-ordinator therefore provided a valuable source of patient information and communication in the absence of nursing input at the meeting.

Patient experiences of collaboration

No significant changes were measured in patients' experiences of interprofessional collaboration following the introduction of the WBMT system. Patients continued to feel that staff worked well together on the ward while delivering care.

Medical team activity

As previously stated, one of the aims of the WBMT system was to ensure that patients under the care of each medical team were found beds on either their firm's home or outlyer wards. For one of the study wards the system was successful in reducing the number of non-home ward medical teams with patients on the ward. As Table 11 reveals, Ward 1 had only small numbers of non-home ward teams based on it when compared to their pre-WBMT figures (see Table 4).[16] In contrast, Ward 2 maintained their relatively large numbers of non-home ward medical teams with patients on the ward.

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[16] See Appendix 4 for an aggregated table of medical team activity from all phases of the study.

Month	Number of non-home ward teams with patients on study wards	
	Study ward 1	Study ward 2
Oct 01	0	10
Nov 01	2	10
Dec 01	4	11
Jan 02	1	9
Feb 02	3	10
Mar 02	4	9

Table 11: Number of non-home ward medical teams with patients on the two study wards in Phase 2

This disparity can be explained by the fact that the teams based on Ward 1 were specialists in a medical area that received large numbers of Category A patients. They were therefore able to fill all of the beds on their home wards with Category A patients under their care. However, the teams based on Ward 2 were specialists in an area that received far fewer Category A patients. Category A, B and C patients from other teams were therefore often transferred to this ward.

Patient care

This section of the report discusses the nature of patient care within GEM after the WBMT system was introduced. Three main areas are covered: 'Staff perspectives', 'Patient satisfaction' and 'Audit data'.

Staff perspectives

On the whole, staff felt that the new system had brought a number of advantages for patient care. They noted that triaging patients to specialist care resulted in a higher quality of care for patients:

> *"This is a respiratory firm and if they* [patients] *do come on to the ward I think their management is probably more special. They do get a more specialised management and they get referred on to the tertiary centres probably slightly quicker. They get appropriate outpatient follow up in respiratory clinics. So there is that advantage"* (SHO).

As the medical teams were based on the home ward for longer periods of time, patients also received more 'responsive' care:

> *"We are getting them* [patients] *treated a lot quicker because the doctors are on hand. When they* [patients] *become unwell the doctors are often here so they get treated, acted on a lot quicker. Yes it has generally improved"* (charge nurse)

In addition, it was felt that delays in discharge as a result of waiting for a doctor to complete a patients' 'to take away' (TTA) medication had been reduced, improving the quality and speed of patient discharges:

> *"Discharges are smoother because you get the TTAs written the day before they go home instead of chasing the doctors round in the morning and having to constantly be on the phone to transport and delaying everything"* (care co-ordinator).

Similarly, therapists, pharmacists, social workers and care co-ordinators were on their home wards more often and were therefore were easier to contact. This also contributed to the streamlining of patient care and discharge planning.

Another advantage to the new system was that it gave patients and their relatives better access to the medical teams:

> *"Because the medical team is based on that same ward most of the time during the day… they are obviously more available to the patient's families to answer questions"* (social worker).

One of the managers noted that patient complaints had reduced in number as a consequence of the more direct access to doctors by patients and their relatives.[17]

While staff valued the new system for enhancing the quality of patient care, a number commented that it had the potential to undermine the continuity of care for some patients. Firstly, a patient requiring specialist care (Category A or B) could be transferred once or twice after being admitted into GEM in order to find a bed within the 'home ward' of a specific medical team. Category C patients could also be transferred two or three times, sometimes to ensure that Category A or B patients could be moved on to a specific ward. Staff noted that these moves were distressing and confusing for patients:

> *"They* [patients] *hate it because they get moved around all the times. Patients like being under one doctor… they like being admitted by a doctor and seeing that doctor all the way through and having some sort of plan"* (house officer).

Secondly, one team might disagree with the management plan chosen by another, creating disjunction in the management of transferred patients:

> *"It makes it very difficult if you are picking up patients who have been managed for quite a long time under different teams. You might not necessarily want to manage them in quite the same way. In fact sometimes we just frankly disagree and it is very, very difficult, because they have already got a plan laid out by another team"* (house officer).

Such moves also created more work for the junior doctors as each patient needed to be 're-clerked' (i.e. have their medical history taken and an examination done by the new team) when transferred into their care.

Thirdly, it was agreed that patients on outlying wards could be *"forgotten about"* (social worker). It was generally acknowledged that these patients received a poorer quality of care as they tended to be 'overlooked' in favour of the patients based on a medical team's home ward.

Finally, the loss of the hand back system[18] was seen by several of the doctors to undermine continuity of care and efficiency. This was because patients that were

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[17] Efforts to obtain these figures were unsuccessful at time of writing.
[18] As noted above, prior to the WBMT system, patients who had been recently or regularly managed by a medical team were handed-based to that team. The aim of handing back to the same team was that these patients were well known to them.

well known by a particular medical team were now being cared for by the admitting team who might have little prior knowledge of them:

"Another area where continuity of care is totally lost is where you have social cases or people who come in very regularly for example, once or twice every six months. With the old hand back system, the medical staff, as in the medical doctors on the team, would remember the patients and avoid repetition" (registrar).

However, it was suggested by one of the managers that this would only be a short-term problem as the new system 'bedded in' and teams obtained a better knowledge of their 'regulars'. It was also noted that special arrangements had been made for well-known patients who either needed or requested to be cared for by a particular team. During this transitional period, it was felt that the care co-ordinators could help to 'bridge' the continuity gap for regular attendees.

Patient satisfaction

Patient satisfaction with the care that they received on the wards remained high. There were no significant changes from the data collected at baseline (Phase 1).

Audit data

The wider impact of the new system on patient length of stay, readmission and outlying rates was mixed. As Table 12 indicates, the average length of patient stay in GEM in Phase 2 was 8.73 days. This represents a reduction of almost one day from the average of 9.52 days in Phase 1 (see Table 6).

Month	Number of days
Oct-01	9.00
Nov-01	9.73
Dec-01	9.11
Jan-02	8.65
Feb-02	6.48
Mar-02	9.60
Overall average	8.73

Table 12: Average length of patient stay in GEM in Phase 2

The re-admission rate for GEM within this period was 9.7% (n=302) of the total number of patients discharged from the Directorate (n=3,125) (see Table 13). This represents a slight increase (1.1%) in the re-admission rate from the Phase 1 figure of 8.6% (see Table 7).

Month	Number of discharges	Number and (%) of re-admissions
Oct-01	532	37 (7.0)
Nov-01	530	47 (8.9)
Dec-01	467	47 (10.1)
Jan-02	591	56 (9.5)
Feb-02	477	59 (12.4)
Mar-02	528	56 (10.6)
Total	3,125	302 (9.7)

Table 13: Patient re-admissions (within 28 days) in Phase 2

As Table 14 indicates 1,335 patients were based in outlying wards in this phase, representing a 21.5% outlier rate. This is a marginal increase from the Phase 1 figure of 20.9% (see Table 8).

Month	Number of patients on GEM wards	Number and (%) of patients on Outlying wards
Oct-01	1,110	162 (14.6)
Nov-01	1,096	180 (16.4)
Dec-01	1,023	151 (14.8)
Jan-02	1,038	349 (33.6)
Feb-02	908	242 (26.7)
Mar-02	1,021	253 (24.8)
Total	**6,196**	**1,335 (21.5)**

Table 14: Number of patients on GEM and outlying wards in Phase 2

The reduction in patient LOS for this phase of the study was not accompanied by significant changes in the proportion of patients re-admitted to GEM (Table 13) or the proportion of patients located on outlyer wards (Table 14). This is not altogether surprising given that case mix and total number of admissions did not change over this period.[19]

Triage issues
This section presents the main issues raised in relation to the new process of triage linked to the introduction of the WBMT system.

Bed management
Ensuring that patients were found an appropriate bed was identified as a problem. It was reported that hospital site managers were initially not familiar with the ward-based system, and were more concerned with hospital level bed management than with ensuring the smooth working of the system within GEM. This was a particular problem at night:

> *"I think that it* [bed management] *has not worked so well at night and I think the night co-ordinators tend to have a knee jerk reaction, just get the patient into a bed anywhere"* (consultant).

As the management of beds needed to be undertaken within a context of chronic bed shortages, these resulted in some Category A patients being admitted as outlyers while Category C patients were transferred to the home ward. The medical teams were sometimes unhappy with these allocations, although the situation was seen to be improving. Nonetheless, bed management under the new system was seen as more difficult than under the old system.

Medical teams, particularly the junior staff, attempted to manage their beds so as to ensure that 'their' (Category A) patients were transferred to their ward. Indeed, it was noted that some doctors effectively *"played the system"* (registrar) in order to

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[19] See Appendix 4 for aggregated tables of patient LOS, re-admission and outlyer rates from all phases of the study.

maximise the numbers of patients in their speciality on their home ward and speed up the care delivered by that specialist team.

As medical teams generally preferred to accept Category A rather than B or C patients, it was reported that problems occurred in locating patients placed in the last two categories on the wards:

> CC1: *"Some of the teams are getting very precious and only want to look after their A patients, they don't want any* [category] *B's or the awkward C's. You know the ones that have got social issues, not very pleasant patients; they don't want those."*
> CC2: *"Yes and if one goes onto that particular ward then it is quick, quick, let's get them off..."* (care co-ordinators).

There was also a perception among Fast Response Team (FRT) members that medical teams on the admissions ward were not managing patients that had been triaged to other teams as actively as they could.

Variation in the use of triage categories

A number of staff commented on the variation between consultants in the use of the three triage categories:

> *"They are all categorising differently: one team's* [category] *A* [patient] *would be another team's C. That is really frustrating"* (FRT member).

One of the senior doctors noted that some of the triage categories needed to be refined as they were *"too restrictive"* (consultant). Another doctor suggested that patients should be triaged into two categories rather than the three that were being used:

> *"I don't think we need the three categories. I personally think that the consultant should be able to make a decision, either A or C. I don't necessarily feel that the category B adds to our benefits, either to the patients or to the doctors"* (registrar).

'Getting dumped' with category C patients

Staff on wards that admitted small numbers of Category A patients complained that they were *"getting dumped"* (house officer) with Category C patients who had 'social' rather than 'medical' problems:

> *"We are generally getting the patients that nobody else wants on their ward… they generally have social problems or they are homeless. There are IVDUs[20], there are alcoholics and on the whole very old. I think the average age is probably about 80"* (SHO).

Doctors on one of these wards also complained that the case mix of patients was negatively affecting their learning experience. However, a consultant responded that the patients' need for specialist care should come before the needs of trainee doctors to see a wide spectrum of patients.

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[20] Intravenous drug users.

Handing over patients

A number of medical informants noted difficulties in handing patients over to other medical teams following intake as the admitting team was not always able to give a verbal handover to the next team. Junior doctors also reported occasions (although small in number) in which an agreement to transfer a patient had later been overturned by a senior doctor.

Also of concern was that patients could often *"fall between stools"* (manager) if they were triaged to a team who later disagreed with this triage decision, leaving the patient with no team managing their care. In addition, staff would occasionally *"lose track of patients"* (care co-ordinator) when they were transferred between wards:

> *"There was a nightmare the other day… the doctors had handed them* [the patients] *over to different teams and they didn't know who they had handed over to, so they couldn't find them… nobody could… It took quite a long while to find them. One had actually gone home"* (FRT member).

It was generally agreed that delays in treatment and care could occur during the transfer period and that there was sometimes confusion as to which other professionals, such as the therapists, were responsible for a patient's care. Some staff also noted that the transfer of patients meant that the relationship of trust built with the patient was lost. In addition, transferring patients between medical teams also resulted in a diminished sense of professional cohesion among doctors:

> *"You can actually become angry with other teams, whereas you never were before.* [Previously] *we worked as a medical directorate, now we work as individual teams and one team will shout at another for not handing someone over"* (house officer).

A further problem was that medical teams sometimes disputed or refused handovers. Furthermore, some specialties had not subscribed to the triage system and refused to accept patients without a formal referral. Such issues sometimes caused a further tension between medical teams.

Structured clerking sheet

Initial views of the new structured clerking sheet were positive. Medical staff felt that it was a useful tool for recording key medical information. Two of the consultants reported that it had improved the quality of note taking, thereby making handovers easier.

Profession-specific issues

This section considers the views of different professional groups within GEM regarding the initial impact of the WBMT system.

Medicine

Doctors working in the high volume specialties, such as respiratory and cardiac medicine, felt that their workload was higher than that of teams in other specialties. However these doctors were fairly satisfied as they had a well-defined cohort of category A patients to manage.

Some junior doctors noted that their pattern of work had changed. Under the old system, medical firms would be very busy in their post-take period and then become gradually quieter as patients were discharged. Under the new system, there was a more continuous stream of patients being admitted to each firm. This was because, firstly, empty beds were immediately filled with patients who became the responsibility of that ward team and, secondly, new Category A patients in a team's speciality area would be triaged to them.   This was regarded as stressful for the junior staff:

> *"Our lives are a bit more stressful than they were… we were always able to reduce our patient load before the next take session… if we were busy on call on one day and throughout the week able to… discharge a lot of people, then you have two or three days when you were nice and quiet. Whereas now every day seems a lot more, you have to pick up category A respiratory patients throughout the hospital"* (house officer).

Doctors were dissatisfied with this change in the nature of their workload for several reasons, including:

- they could receive very ill patients on any day of the week that disrupted other activities (e.g. clinics) and required the junior doctors to 'interrupt' the senior doctors more often.
- the flow of new patients made it difficult to find the time to thoroughly clerk and examine them, and decide and follow-through on a management plan.
- they might be asked to take over patients who had been in the care of another firm for several days and were nearing discharge. The transfer of these patients might delay their discharge as the new team would need to familiarise themselves with the case.

While the new system helped locate medical teams more closely with their colleagues on the ward, several doctors indicated that they still had patients on *"seven or eight* [outlying] *wards"* (house officer). It was felt that this restricted the time available to develop good interprofessional relations with the staff based in their home ward. Also, many junior doctors acknowledged that while the new system allowed them to spend more time on their home ward, this did not always translate into spending more time with patients:

> *"I wouldn't say that we are spending longer with them* [patients]. *Perhaps longer with their relatives because their relatives can find us and we see them"* (SHO).

In addition, several junior doctors found that being visible on their home ward for longer periods meant that their work was being continually interrupted:

> *"You sit on this ward and sometimes you just want to leave it because you are constantly getting harassed by nurses… You would be sitting writing paper work or a letter or something and constantly people are pushing drug chart under your head and constantly relatives talking to you"* (house officer).

The vast majority of doctors felt that the new system limited their educational opportunities in several ways. Firstly, they were now *"not seeing a good range of patients"* (house officer). Secondly, they felt that the new system often did not allow them to follow through a patient's care from admission to discharge. Thirdly, some of the junior doctors felt that the new arrangements, in terms of continuous admissions

and transfers, meant that they spent less time with individual patients. These factors were felt to disrupt their learning.

Nursing

One charge nurse noted that, by facilitating closer working relations with the medical teams, the new system had improved the confidence of many nurses in communicating with the doctors:

> *"A lot of the nurses feel a lot more confident at approaching some of the doctors, especially the more senior doctors because they are here all the time, not all the time but a lot more time that before"* (charge nurse).

For another charge nurse, the change to providing specialist care to Category A patients had impacted positively on staff morale and motivation. It was felt that these improvements would have positive effects on nursing recruitment and retention in the longer term. However, for many of the staff nurses and HCAs, this change meant that their workloads had become much heavier:

> *"You really can be worn out at the end of the shift because it is so heavy… now everybody is dependent on oxygen and nebulisors… it makes a lot of difference"* (staff nurse).

For the nursing staff on a ward that admitted high numbers of Category C patients, the new system was also regarded as problematic as these staff were required to provide care to patients with mainly social rather than medical problems. It was felt that this might de-skill the nurses:

> *"My concern that the nurses are going to become deskilled because we tend to get category C patients predominately on here… I am worried if we get somebody really sick we are going to become a bit unused to have someone really critically ill"* (charge nurse).

Therapy

The occupational therapists commented that one effect of being located in the same ward space with the medical teams was that doctors were beginning to understand therapists' role in a more comprehensive fashion. In addition, the new system provided regular opportunities for interprofessional contact with their medical colleagues, thereby maximising the therapists' contribution to patient care:

> *"I am more likely to get stopped on the ward, 'oh can you go and see Mrs Smith or what about Mr Brown going home?' As opposed to something being written in the medical notes that I find the next day and then have to try and find the right house officer… I think we are all just a lot more visible"* (physiotherapist).

However, it was pointed out that the lack of occupational therapists and physiotherapists meant that they could not be based on one ward and often they needed to cover two or three wards at a time. This, it was felt, diluted the impact of the new system on opportunities for effective collaboration.

Care co-ordinators

The care co-ordinators noted that their workload was more even and therefore more manageable following the introduction of the WBMT system. For one care co-

ordinator, the impact of this new type of workload was that patient problems could be identified more easily:

> *"My feeling is that it* [the WBMT system] *has evened out the work load... instead of sort of having loads of patients all at once we are getting a few each day. Therefore, it is not such a mad rush. I think things are being picked up better because of that… it is being distributed more over the week"*(care co-ordinator).

Social work
One of the social workers noted that the new system, while promoting closer working relations and easier access to colleagues, generated a minor problem for referrals. Many staff were 'informally' referring patients for social work input, often by verbal exchange. This was considered an inappropriate mechanism as patients could be missed if they were not formally referred to the department.

Pharmacy
The pharmacists commented that the WBMT system had begun to positively change their relationship with the doctors. Whereas their previous relationship was centred on addressing medication problems with the doctors (which meant many doctors were wary of them), the new system offered more opportunities for discussion around medication before it became a problem.

In addition, the change of some wards to certain specialisms meant that their stock lists of drugs had changed. In the short term, this meant that the ward was *"running out"* (pharmacist) of certain drugs. Therefore, the pharmacists needed to keep a careful eye on ward drugs through this 'transitional' phase.

Fast response team
The FRT viewed the WBMT system positively as they were receiving more timely and appropriate referrals than had been the case before. Nevertheless, in terms of their bed management role, it was felt that the system highlighted the shortage of beds within the Directorate. Consequently, this part of their role had become more *"unpleasant"* (FRT member) as they were required to continually justify their bed management decisions, especially to the medical teams who were keen to admit only their Category A patients.

Phase 3: Follow-up
This section presents data collected nine to twelve months after the introduction of the WBMT system.

Staff continued to attach a high value to the system, as one of the managers pointed out, *"it has really taken off"* (manager). Indeed, it was felt that the 'bedding-in' process was remarkable smooth, given the complexity of the changes involved combined with the need to continue providing a good clinical service to patients:

> *"It was quite a remarkable achievement to take a service which runs relentlessly… and to pick a day on which it will suddenly work completely differently. It is quite a major change for everybody, and for it not to crash, which it hasn't. There may have been quite a lot of teething problems but it hasn't just*

seized up and we haven't been forced to go back to the old system, just because it has failed. So I think that is quite an achievement really." (manager)

The range of changes associated with the longer-term operation of the WBMT system are discussed in five sections: 'Interprofessional collaboration'; 'New initiatives' 'Patient care'; 'Triage issues'; and 'Profession specific issues'.

Interprofessional collaboration

This section explores the longer-term impacts of the WBMT system on interprofessional collaboration within GEM. These impacts are divided into five sub-sections: 'Collaboration on the wards'; 'Staff experiences of collaboration 'Multidisciplinary ward meetings', 'Patient experiences of collaboration'; and 'Medical team activity'.

Collaboration on the wards

As Table 15 indicates, the number of interprofessional interactions observed nine months after the implementation of the WBMT system (n=257) was substantially higher than just after (Phase 2, n=174) or before implementation (Phase 1, n=154).[21]

		Interaction Initiated by								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with	D		35	4	2	4		2		1
	N/HCA	41		8	14	25	6	15		12
	Pharm	3	3							
	FRT		1			2				
	CC	7	10		3		2	2		1
	OT	1	4			2		2		
	PT	2	12			6	2			
	SW					1				
	Clerk	6	10		2	2	1	1		
	Subtotal	60	75	12	21	42	11	22		14
	Total number of interactions: 257									

Table 15: Summary of interprofessional interactions on the study wards in Phase 3

Doctors, nurses and care co-ordinators remained the groups that initiated the largest number of interactions with other professionals, accounting for 69% of all interactions observed in this phase of the study. For the first time, nurses initiated the largest number of interactions observed (29%). While nurses initiated interactions with a wide group of professionals, the majority of interactions initiated by doctors were with nurses (68%). Overall, interactions with nurses (by other professionals) constituted the largest group of interactions (47%).

The increase in the number of interactions initiated by nurses could be explained by them having greater opportunities for face-to-face interactions with doctors on the wards. This is supported by a decrease in the number of 'bleeps' received by doctors in this phase (see below). The increase in the total number of interprofessional interactions observed suggests improved communication on the wards. However, the observations also indicated that the nature of interprofessional interactions did not change over the period of the study, remaining largely task-oriented and terse.

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[21] See Appendix 4 for observation tables from all phases of the study.

Staff experiences of collaboration

In general, staff reported that their positive experiences of the WBMT system had been maintained since the last period of data collection. Nursing, therapist, care co-ordinator, pharmacist and social work staff continued to value the improved relationships with their 'home' ward doctors. Many reported that doctors were now *"a lot more approachable"* (pharmacist) and the majority of these staff felt that they now knew their home ward doctors better:

> *"It just seems like second nature now… I will just wander up to the medical teams if they are sitting at their desks or on their ward rounds or something and ask them things, or get them to write up some drugs or something. They tend to stop me a bit more. If I am on the ward and I am around they might just come up and say, yes we have just seen this patient, could you see them or could you refer them for something"* (physiotherapist).

Relationships between other professionals had also improved:

> *"You get familiar with the staff, with the other multidisciplinary staff you are working with… it* [the WBMT system has] *definitely enhanced working with people"* (social worker).

A number of staff had developed informal mechanisms to maintain good communication with their colleagues. For example, a physiotherapist noted that she received a daily handover from the nursing staff so as to keep up to date on developments with patients.

> *"Every morning I get a hand over from the nurses… so I know what is going on, on the ward… what has happened overnight"* (physiotherapist).

The sustained good communication levels with the doctors appeared to have a positive effect on the number of times they were bleeped. Bleep data collected for this phase of the study reveal that the total volume of bleeps was 6,287 (see Table 16). This represents a decrease of 1,354 bleeps (17.7%) from the Phase 2 figure of 7,641 bleeps (p = 0.004) and 3,245 bleeps (34.0%) from the Phase 1 figure of 9,532 bleeps (p = <0.000).[22]

	Registrars (n=13)	SHOs (n=8)	HOs (n=16)
Number of bleeps	2,190	833	3,264
Total	6,287		

Table 16: Number of bleeps received by doctors in Phase 3

It was felt that the previously identified problem of doctors using the charge nurses to communicate with other nurses on the ward had further diminished:

> *"It has got better in that because you are building proper relationships with the doctors and the house officers are with the other nurses, they will go to other nurses to ask them to do things. They won't always come directly to me"* (charge nurse).

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[22] Appendix 4 contains a detailed breakdown of bleep figures from all phases of the study.

However, it was acknowledged that the interprofessional relationships shared by staff could still be restricted to *"parallel working"* (consultant), with limited information sharing or effective joint working. One manager made the following comment on doctor-nurse relationships:

> *"Communication… we are still really struggling with it… not just from a nursing, but from a doctors point of view… it is very much everyone works alone. Has their own little bit of knowledge that they don't share and it still amazes me"* (manager).

Interviews revealed that a number of the staff nurses and HCAs felt that doctors neglected basic aspects of communication such as introducing themselves when they came on to a ward or getting to know nurses' names. Nurses also felt that doctors should take more responsibility for updating nurses on patient management plans:

> *"I find as well that you have to say* [to the doctors] *'oh what is happening with this patient, what's changed, what's new?' You have to look for them. It would be nice if they would look for the nurse"* (staff nurse).

In addition, it was also felt that doctor-therapist communication was, on occasions, still poor, especially regarding patient referrals and discharge:

> *"There are still people [patients] that get referred and they [doctors] say, 'they are going home tomorrow, you need to sort them out'… and it is people that have been in the hospital for at least a month and you think well why has nobody referred me to them before? Then you do an assessment and you say, 'well, actually all these things need to be changed'. They say, 'well, they are going tomorrow." Oh don't ask me to do my assessment if you are not going to listen to what I say"* (occupational therapist).

A number of staff noted that other problems related to their collaborative work with doctors still persisted. For example, they still had to wait for junior doctors to write TTAs and for senior doctors to take medical decisions. Some junior doctors also cited examples of problems with their interprofessional work, such as slow responses to their requests by nurses or limited information on patient progress.

Given, this limited level of interprofessional interaction, a number of informants continued to acknowledge the important role of the care co-ordinator in liaising between other professionals and agencies:

> *"Having a care co-ordinator is a life saver… if we want O.T., physios, care of the elderly referrals, stroke referrals we just tell our care co-ordinator. I think care co-ordinators are very helpful and it makes a big difference"* (house officer)

Indeed, it was suggested that as the care co-ordinators had developed a comprehensive knowledge about patient discharge a number of staff preferred to liaise with them rather than with the nurses, who were felt to have a poorer knowledge of these issues.

Both doctors and nurses noted that it was now more common for a nurse to join a doctor's ward rounds. However, nursing attendance remained relatively poor:

> "You very rarely see the nurses going round on a ward round. The doctors just take the trolley round with them and they are huddled together. The nurses are doing other things" (care co-ordinator)

As these rounds continued to occur irregularly, and at times of day when nursing staff were busy, it was felt as no surprise that this situation had not improved over time. Other informal methods of communication were therefore still important in ensuring that nurses and doctors were up-to-date with patient issues. These included *"grabbing one of the nurses after the round"* (house officer) or reading the medical notes, if a verbal exchange was not possible.

Multidisciplinary team meetings

MDT meetings remained a highly valued forum for interprofessional discussion in GEM:

> "It [the MDT meeting] *is nice, I mean you can catch up with what is happening with each patient with everybody, the nurses, O.T. and physios, care co-ordinators, everyone"* (house officer).

However, the attendance of both nurses and doctors remained poor, with both groups citing competing workloads as the reason for being unable to participate. The lack of senior medical staff continued to be seen as problematic as this often precluded medical decision-making:

> "At the MDT meetings you should have had at least an SHO come if not the registrar [someone] *who can make decisions but they still don't come… the house officers, they either don't know what is going on, or if you say, 'when are you going to discharge?' they don't know because they can't make that decision"* (care co-ordinator).

Staff felt that poor attendance by senior doctors limited the value of MDT meetings. Given this persistent problem, a number of informants suggested that senior staff needed to stress to their juniors the importance of attending these meetings.

Patient experiences of collaboration

No changes were detected in patients' experiences of interprofessional collaboration nine months after the introduction of the WBMT system. Patients continued to feel that collaboration was good between the different staff groups caring for them.

Medical team activity

Patient admissions data from the two study wards revealed a similar picture to that in Phase 2 (see Table 11). For Ward 1, the number of non-home ward medical teams with patients on the ward remained small. In comparison, Ward 2 had high numbers of non-home ward teams using the ward (see Table 17).[23]

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[23] See Appendix 4 for an aggregated table of medical team activity from all phases of the study.

Month	Number of non-home ward teams with patients on study wards	
	Study Ward 1	Study Ward 2
Apr 02	3	8
May 02	0	7
June 02	4	8
July 02	3	7
Aug 02	2	7
Sept 02	4	5

Table 15: Number of non-home ward medical teams with patients on the two study wards in Phase 3

It is likely that the reason for this continued difference between the wards remains the same as described in the previous section of the report (see page 30).

New initiatives

As noted in the last section of the report, two new initiatives were introduced to improve collaboration. These aimed to address the continuing *"ad hoc"* (pharmacist) nature of collaboration following the introduction of the WBMT system. The initiatives included a daily 'board round' (where doctors and nurses would stand at the patient board and briefly update one another) and a 'multidisciplinary discharge form' (a record of the actions completed by the different professions in relation to patient discharge).

Board rounds

Following the introduction of the board rounds, the nurses experienced variable success rates in encouraging doctors to attend:

> *"They* [nurses] *are trying their hardest there to initiate and implement the board rounds… they are having good times and bad times. Three weeks ago it was bad, no one was wanting to do it… whereas at other times it has gone really well, quite often, and regularly"* (manager).

This variation was explained by the doctors' views on the board rounds. Some were very keen on the idea as an *"efficient"* use of time (registrar) and had instituted it on their wards. However, others felt that the rounds occurred *"so many times"* (house officer) that they were of limited value.

Multidisciplinary discharge form

A number of staff, particularly the nurses and care co-ordinators, felt that the new MD form was useful. However, it was found that only a handful of staff, mostly nurses and almost no doctors or social workers, were using it. Despite efforts to promote the use of the form (e.g. placing it in an accessible location) it continued to have little effect. The reason for its poor use appeared to be that it created additional work and duplicated information held elsewhere.

The poor take-up of both these new initiatives and the poor attendance of doctors and nurses at MDT meetings led a number of informants to suggest that these activities needed to be more actively promoted by senior staff:

> *"I think it is just having the support from people higher up, like attending MDT meeting, more communication with allied staff, I think the support really needs to come from up above"* (occupational therapist).

Informants suggested that in order to promote and support effective collaboration, senior staff needed to act as interprofessional *"role models"* (manager). In doing so, more of their junior staff would see the value of a shared approach to work on the wards.

Patient care

The nature of patient care within GEM nine to twelve months after the WBMT system was introduced is described in three sub-sections: 'Staff perspectives', 'Patient satisfaction' and 'Audit data'.

Staff perspectives

Staff continued to feel that the WBMT system offered a number of advantages for patient care. In particular, it was agreed that providing more specialist care was particularly beneficial for patients:

> *"You know generally they are probably getting better care because they are on a ward that specialises in the problem that they have and they are under a specialist that specialises in that problem, so I am sure they get better care for that. I am sure that is what the family realises as well"* (registrar).

It was also felt that the WBMT system continued to facilitate much more 'responsive' care, with good access to doctors for patients and their relatives:

> *"You can get a doctor a bit quicker... They are on the ward so you can ask them to speak to a relative"* (charge nurse).

Another positive aspect of the system was that it allowed staff to easily and quickly undertake informal discussions with their colleagues easily if they encountered a problem with a patient:

> *"It is easier to get hold of people because… if you have got a difficult patient that you are having a hard time with, then you can just discuss it with other members of the team"* (physiotherapist).

In addition, it was suggested that being based on one ward for long periods of time meant that staff developed an in-depth understanding of their patients:

> *"They* [doctors, therapists, nurses] *all seem to know the patients really well, which I really never noticed before, they have just got that one ward and they know everybody"* (FRT member).

This aspect of the new system was seen to improve health care delivery as patient problems were *"more likely to be spotted"* (registrar). Nevertheless, it was also noted that certain aspects of the WBMT system still undermined continuity of care for some patients. For example, many of the doctors again raised the problematic process of patient transfer between medical teams following triage. For some, this problem was exacerbated by the failure of some medical teams to explain to patients that they

would be transferred to another team. Nevertheless, one manager felt that this particular problem had *"calmed down a lot"* since Phase 2.

The problem of patients on outlying wards being *"forgotten"* (FRT member) by some medical teams was again noted by staff. It was generally acknowledged that these patients received a poorer quality of care as they tended to be 'overlooked' in favour of the patients based on a medical team's home ward. This was also acknowledged as a problem for other staff:

> *"Sometimes when we have outlyers it is a bit difficult because most of my folk are usually on one ward and then when there are outlyers, you don't seem to remember those ones until, maybe the nurses on the ward call you to say this person is here. Then you are reminded"* (social worker).

Directorate management had introduced a new four-day hand-back rule to help with the problem of continuity associated with the loss of the traditional hand-back system.[24] Whilst doctors felt that this new rule alleviated some of the problems attached to the loss the original hand-back system, they acknowledged that a number of patients, especially those who were regularly admitted into GEM with Category C type conditions, could still experience poor continuity of care:

> *"A disadvantage is if you get someone who is a* [Category C] *regular attender they go here, there, there and there and they can see three or four different consultants in the space of six months"* (care co-ordinator).[25]

Others noted that the introduction of this new rule caused *"confusion"* (house officer). For example, some teams 'counted' weekend days as part of these 'four days' while others did not. The junior doctors felt that this confusion needed to be resolved as it created tension between medical teams.

One consultant suggested that the level of continuity offered by the previous system of care had to be *"sacrificed"* (consultant) under a WBMT system. However, another commented that the national reduction in junior doctors' working hours had contributed to reduced continuity of medical care. Given these problems, many considered the care co-ordinators crucial to maintaining good levels of continuity within the Directorate.

Many staff continued to feel that the relatively small amount of time spent by senior doctors on the wards was problematic. Often it meant that patient care or discharge was delayed as medical decisions could not be taken. For one of the registrars, the absence of consultants was a particular problem:

> *"They* [patients] *still have terrible access* [to senior doctors]. *They can go and see a house officer and get half-baked information… the consultants in this hospital simply don't make themselves available enough… there are exceptions, but by and large they don't want to be available, they are absentee landlords.*

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[24] Under this new rule, if a medical team had managed a patient for four days they continued managing them regardless of the ward to which the patient was transferred.
[25] To improve this situation, directorate managers introduced a two-week hand-back rule whereby a patient re-admitted within two weeks became a Category A patient to their previous medical team.

So the registrars will pick up some of this but frankly I don't want to be available round the clock for relatives" (registrar).

For several staff, this problem was worsened by a perceived lack of SHO cover on the ward due to their rotation system and the difficulties in filling these posts.

The poor physical condition of some of the wards within the Directorate, combined with a large number of beds to be managed, were again raised as providing a negative experience for patients and their relatives.

Staff suggested some improvements to the system. A manager commented that a full-time consultant should be appointed to 'trouble shoot' across the directorate as a whole:

> *"I'd just really like there to be a consultant around all the time to take general medicine as a whole… We need someone around to kind of deal with the issues that come up and someone at that level could push a CT scan because they would have the authority… Also organise and prioritise workloads for junior staff and also the [wider multidisciplinary] team"*(manager).

This person could have an overview of the whole system rather than just specific wards. Other suggestions included a regular Monday morning meeting to check the allocation of handovers and new admissions from the weekend; a mechanism of ensuring that ill patients were adequately handed over; and daily handovers between the outgoing and incoming take teams and house officers from all the firms.

Patient satisfaction
Patient satisfaction with the care that they received remained high, with no significant changes from the data collected in Phases 1 and 2.

Audit data
As Table 18 indicates, the mean length of patient stay in GEM was 8.62 days during Phase 3 of the study (April-September 2002). This represents a reduction of 0.11 days from the mean LOS measured after the introduction of the new system (Phase 2, see Table 12).

Month	Number of days
Apr-02	9.43
May-02	8.70
Jun-02	9.43
Jul-02	8.71
Aug-02	7.66
Sep-02	7.77
Overall average	8.62

Table 18: Average length of patient stay in GEM in Phase 3

The re-admission rate for GEM within this period was 9.6% (n=293) of the total number of people discharged from the Directorate (see Table 19). This represents a 0.1% decrease for re-admissions from Phase 2 (see Table 13).

Month	Number of discharges	Number and (%) of re-admissions
Apr-02	500	41 (8.2)
May-02	554	56 (10.1)
Jun-02	519	67 (12.9)
Jul-02	537	47 (8.8)
Aug-02	519	46 (8.9)
Sep-02	436	36 (8.3)
Total	**3,065**	**293 (9.6)**

Table 19: Patient re-admissions (within 28 days of discharge) in Phase 3

As Table 20 indicates, 1,286 patients were based in outlying wards in Phase 3 of the study, representing a 22.3% outlier rate. This rate was marginally higher than in Phase 2 (see Table 14).

Month	Number of patients on GEM wards	Number and (%) of patients on outlying wards
Apr-02	906	218 (24.1)
May-02	972	270 (27.8)
Jun-02	990	229 (23.1)
Jul-02	1,048	182 (17.4)
Aug-02	958	208 (21.7)
Sep-02	887	179 (20.2)
Total	**5,761**	**1,286 (22.3)**

Table 20: Number of patients on GEM and outlying wards in Phase 3

Over the three phases, there was a significant downward trend (p=0.05) in patient LOS from 9.52 days (Phase 1) to 8.73 days (Phase 2) and to 8.62 days in this phase. However, this trend started prior to the introduction of the WBMT system and therefore cannot be wholly attributed to it. Nonetheless, given that some senior managers predicted an increase in LOS with the introduction of the new system, it is important to note that this did not occur.

No such improvements were found in relation to re-admission rates and outlier rates. This is not altogether surprising given that case mix and total number of admissions did not change significantly. [26] However, other quality or appropriateness of care measures may have revealed improvements connected to the longer-term operation of the WBMT system.

Triage issues
This section presents the main issues raised regarding the process of patient triage.

Bed management
A number of problems related to bed management under the WBMT system were again raised by staff. Firstly, it was suggested that hospital site managers still did not fully understand the triage process. This made effective management of beds within

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[26] See Appendix 4 for aggregated tables of patient LOS, re-admission and outlier rates from all three phases of the study.

GEM difficult to achieve when these managers took responsibility for bed management during 'out of hours' periods (weekends and evenings):

> *"There are still problems kind of over night… but we do try as much as possible to try and fill the beds during the day, you know before six or allocate them before six in the evening because we know that at night if a bed is empty then you are going to get anybody into it"* (charge nurse).

One of the doctors felt that such difficulties would persist unless these managers became more informed and *"motivated"* (registrar) about the WBMT system.

Secondly, a number of staff noted that some medical teams continued to manipulate the system to ensure 'their' (category A) patients were moved into their home ward:

> *"Some of the medical staff can become quite territorial about the patients… they will bleep you and tell you how many beds they have got coming up on X ward before anybody else will know, they have got six beds coming up on such and such a ward – can we have this patient?… So they make sure they get their own [category A] patients"* (FRT member)

Thirdly, bed shortages within the Directorate persisted. Again, this problem was felt to compromise the whole WBMT system. Often, the shortage of beds meant that some patients were required to lodge in outlyer wards:

> *"Since this started nine months ago I don't think there has been one day when we haven't had any outlyers… we have got fourteen, no, sixteen today. So that is still sixteen people in other beds that shouldn't be there"* (FRT member).

Finally, the view that patients on outlying wards tended to be 'overlooked' by staff (e.g. doctors, social workers) as they were more focused on the patients in their home ward also persisted.

Triaging

Continuing inconsistency in the use of the triage categories was noted by staff, particularly for Category B patients. As one of the managers explained:

> *"I think that there are still inconsistencies in what a consultant will categorise as what…* [Category] *A is fairly specific and most people know what an A is, it is* [Category] *B where there is so much room for variance"* (manager)

Several informants suggested that further work was needed to clarify the definition of Category B patients. Others felt that the category could be removed from the system as it was seldom used.

Medical team handovers

Poor handovers between medical teams remained a problem. One consultant noted that a large number of these handovers were *"inadequate",* with only limited information being transferred from one team to another:

> *"It is no more than a sentence of a diagnosis really, and a name…and that would be over the phone and it doesn't always happen"* (registrar)

It was also pointed out that some teams continued to handover patients late in the afternoon. This was considered a *"dangerous practice"* (registrar) as there was insufficient time left in the working day to examine them or arrange investigations. In contrast, other teams were more satisfied. In general, teams stressed the pivotal role the registrar played in the handover process.

The problem of Category C patients
In responding to previous concerns about the concentrated nature of Category C patients on some wards, managers attempted to ensure there was a more even distribution of these patients across the Directorate. Consequently, it was agreed that this problem had been alleviated to some extent. Nevertheless, staff continued to view Category C patients in poor terms, often referring to them as the *"dross"* (manager) or the *"cud"* (nurse) of patients admitted into the directorate. Reflecting on this situation, one informant noted:

> "*I feel sorry for the Category C patients…nobody wants them*" (FRT member).

Structured clerking sheet
There was a continued feeling that the clerking sheet was helpful in providing good quality medical information. However, it was also noted that patient triage categories were not always written onto the sheet. This practice was considered *"very frustrating"* (FRT member) for the care co-ordinators and the FRT team as it often slowed their work

Profession-specific issues
Individually, the different professional groups offered a range of perspectives on the impact of the WBMT system nine months following its introduction into GEM.

Medicine
Medical staff raised a number of issues that affected their profession. Firstly, the continued lack of variety of patient cases meant that many medical staff were still concerned that the system provided a poor learning experience for junior staff. However, one doctor noted that junior medical posts were as much about learning the process of care (e.g. organisation, communication, etc) as about improving clinical knowledge and, therefore, that this concern was misplaced.

Secondly, most medical staff commented that firms sometimes disagreed on the hand over of patients. This could create bad feeling, particular among junior doctors who were concerned that they might be getting more than their fair share of patients:

> "*The ward based system does create a little bit more tribalism so firms become territorial… in certain cases somewhat antagonistic towards other firms… house officers always get in a flap about this because they don't want to feel that somebody is getting one over on them*"(registrar).

Thirdly, some of the doctors from high volume specialities such as respiratory, noted once again that the WBMT system highlighted the *"imbalances [in workload] between the firms"* (consultant). For this informant, this situation indicated that there was a need for more respiratory physicians within GEM.

Several junior doctors again complained that their work was regularly interrupted by other staff, patients and relatives. Nevertheless, most did not see this as a significant problem. The senior doctors felt that their ward rounds were now much quicker because most of their patients were located in one physical space:

> "The twice weekly business ward rounds are much more controlled. There is no question. From our point of view we are seeing a more coherent group of patients in a more, in a closer, smaller space" (consultant).

Despite increasing the junior doctors' presence on the wards, the WBMT system had not increased the senior doctors' presence, which remained limited. Nevertheless, it was felt that the system had focused senior doctors' efforts on their home ward and was therefore more efficient.

It was again noted that the WBMT system had resulted in a constant level of work, as firm's patient numbers did not vary widely:

> "It keeps numbers equal throughout the week whereas the other system would be completely, like, swamped post take and then the numbers would go down. This way it is kind of equal numbers all the way through the week" (house officer).

Finally, it was noted that the WBMT system inhibited junior medical staff from interacting and developing relationships with colleagues from other medical teams. Nevertheless, it was noted that these doctors were still required to interact with large numbers of nurses on the various outlying wards.

Nursing
Continuing problems with the recruitment and retention of nursing staff meant that nursing input into ward level care and the management of the new initiatives required to improve care within GEM was difficult to achieve.

One of the charge nurses on a ward that received a high number of Category A patients felt that the nursing work had become more interesting and attractive. However, the staff nurses and HCAs complained that their workload was becoming *"too heavy"* (HCA). In contrast, nurses on a ward that admitted high numbers of Category C patients noted that their workload had gone down:

> Nurse: "*I must say after the ward based* [system] *came in, we have more time to be honest. To be fair it is not as busy... Before we used to be really, really busy...*"
> Nurse: "*We just don't find that many critical patients as we used to have*" (staff nurses).

Opinions on whether the nurses were becoming more de-skilled under the WBMT system were varied. Those on wards that received large numbers of Category A patients felt that de-skilling was not an issue and noted that nurses were becoming more specialised in specific areas. However, a number of nurses on a ward that admitted high numbers of Category C patients felt that de-skilling, due to caring for mainly patients with social problems, was still an issue. Nevertheless, one manager suggested that nurses on this ward could still develop their general nursing skills while caring for these patients.

Therapy

The therapists offered differing views of the WBMT system in this phase. One of the occupational therapists felt that a number of problems persisted in her relationship with some of the medical and nursing staff, including poor handovers with the nurses; a poor understanding of the OT role; and a focus on discharge planning rather than therapeutic work. However, it was noted that the improvements in communication and collaboration between therapists had been maintained. Nevertheless, it was pointed out that referrals for physiotherapy from doctors and nurses were still, on occasion, inappropriate.

Both occupational therapists and physiotherapists continued to note that they covered at least two wards and were therefore not completely ward based. This was seen to reduce the impact of the system on interprofessional collaboration.

Social work

The problem discussed earlier of staff attempting to make informal social work referrals appeared to have diminished in this phase. However, it was noted that delays in accessing social work input had arisen when patients moved from one ward to another and were therefore transferred between social workers. Efforts were underway to address this problem.

Pharmacy

The pharmacists noted that the WBMT system provided a good training environment for junior pharmacists as they could establish relations with one team and develop expertise in a particular area (e.g. respiratory medication). However, the system was felt to be more restrictive for more senior staff who wished to develop expertise in a range of areas. These staff would need to rotate between wards to develop this expertise.

Care co-ordinators

It was pointed out that a large proportion of the care co-ordinators' time was now spent checking whether new patients had been admitted to wards under their care. This resulted from the continuing problem of poor handovers between medical teams which meant that patients could therefore be missed, especially if they were based on an outlying ward:

> CC1: *"Unless we keep track of where patients are, the doctors wouldn't know that there was a patient on X* [ward]*".*
> CC2: *"And they* [the doctors] *may not been seen for two days"* (care co-ordinators).

Fast Response Team

For the FRT, the increased interest from medical teams in managing the beds on their home ward (to ensure they would admit patients into their own speciality) remained problematic. Again, it meant that FRT members continued to spend large amounts of their time negotiating with doctors (and also nurses) over the management of beds and justifying their decisions to staff.

Conclusions

Overall, the move to a WBMT system within GEM was a successful one, particularly given the complexity of changes required while maintaining the delivery of high quality care to continually large numbers of patients.

This part of the report presents conclusions from the study in four sections: 'Interprofessional collaboration', 'Patient care', 'Triage' and 'Profession-specific issues'.

Interprofessional collaboration

Over the three phases of this study, the WBMT has had a positive impact in a number of areas. Specifically, it has:

- Increased the geographic proximity of doctors to other professionals, thereby making doctors more accessible.
- Enhanced interprofessional rapport and teamwork between directorate staff.
- Increased the number of face-to-face interprofessional interactions between the different staff groups within GEM. Useful indicators of this change include:
  - A significant reduction in the volume of doctor-related bleeps;
  - A reduction in use of the charge nurse as the primary contact for doctor-nurse communication. Such interactions now include a wider range of nursing staff;
  - Improved pharmacy-doctor relations, characterised by a more proactive rather than reactive approach to discussions around medication;
  - Greater familiarity of doctors with the roles of occupational therapists;
  - Greater confidence among nurses regarding participation in medical ward rounds and their interactions with doctors more generally.

However, the WBMT system has had little impact on collaborative relations in other areas:

- The nature of ward-based interprofessional interactions has remained largely terse and business-like throughout the study.
- The conduct of MDT meetings was unchanged, with doctors and nurses continuing to attend irregularly. This has resulted in restrictive decision-making on patient management during these meetings.
- The limited nature of doctor-nurse interactions during medical rounds remains largely unaffected.
- Despite sharing the same ward space for long periods, a number of staff continued to acknowledge that their interprofessional relationships were restricted. An indication of this is the continued dependence on the care co-ordinator as an interprofessional 'go-between' rather than directly communicating with one another.
- The introduction of new initiatives such as the board round and the MD form has had little impact on the nature of collaboration within the Directorate.

Patient care

The study found that the WBMT system positively affected patient care by:

- Triaging patients with specialist problems to the appropriate specialist medical team where their needs could be more effectively met.
- Improving the general standard of clinical records and the ease of patient handover through the introduction of the structured clerking sheet.

- Providing better access for patients and relatives to junior medical staff. Thereby delivering a more responsive service.
- Maintaining high levels of patient satisfaction with care throughout the study.
- Enhancing the discharge process. Through spending more time together on the wards staff offer a more co-ordinated approach to patient discharge. Although some problems persisted (e.g. waiting for the TTAs), the overall view was one of improvement to this part of the service.
- Maintaining the ongoing trend of reductions in patient length of stay within GEM.

However, it has been found that the WBMT system has had little impact on the following aspects of patient care:
- There was no significant impact on re-admission rates or the numbers of patients based on outlying wards.
- Continuity of care between medical teams, especially during the process of transferring a patient from one team to another, can be slow and inefficient.
- The care of non-specialist (Category C) patients remains problematic. Indeed, medical teams appear generally reluctant to take on Category C patients. These patients were more likely to be based in outlying wards and therefore to be overlooked by teams.
- While the access of patients/relatives to junior doctors was improved, there was a continued absence of senior medical staff (registrars, consultants) on the wards. This often resulted in medical decisions being delayed.
- Staff perceptions of Category C patients were poor, with a number of professionals referring to them as 'dross' or 'rubbish'. Whilst this view of these patients did not appear to adversely affect the delivery of care to them such perceptions are stigmatising and unhelpful.

Triage

Despite a chronic (hospital-wide) shortage of beds, the triage system was generally effective in triaging patients to an appropriate medical team. Nevertheless, a number of minor difficulties persisted that affected its overall performance, specifically:
- The management of beds during evenings and weekends did not always adhere to the WBMT system. Hospital site managers appeared to have a poor understanding of the triage system and regularly failed to locate specialist patients on the appropriate wards.
- A limited and inconsistent use of triage categories. It was found that senior medical staff often had differing definitions of what constituted a Category A, B or C patient. In addition, they also only tended to use two (A and C) of the three triage categories.
- Continuing attempts by some of the medical teams to 'manipulate' the system to minimise the number of Category C patients while maximising the number of Category A patients admitted to their home ward has created tensions between medical teams and with the FRT team.
- An on-going confusion regarding the hand-back of patients recently admitted by another medical firm. Despite efforts to modify this aspect of the system, a number of teams remained unclear about the hand-back 'rules'. Again, this created tensions between teams.

Profession-specific

The study also found that a number of profession-specific issues were associated with the introduction of the WBMT system. These included a range of benefits:

- The closer working arrangements linked to the new system had meant that junior nurses were becoming more confident about approaching and communicating with doctors.
- The system had resulted in staff developing an increased understanding of the occupational therapists' role within GEM.
- Pharmacists reported being more involved in medical rounds and more actively involved in decision-making regarding medications.
- Some nurses reported that their skills were being enhanced through their work with patients with specialist health conditions.

Staff also encountered a range of profession-specific difficulties related to the WBMT system:

- Despite a more even distribution of Category C patients across the Directorate, concerns were expressed from junior doctors and nurses that their clinical learning was limited when they had large numbers of such patients on their home wards.
- The change of working patterns from one of 'peaks and toughs' to continuous patient admissions was felt to have made the house officers' job more difficult.
- Many junior doctors reported that being based on their home ward for long periods of time meant they had lost the informal profession-specific networks they developed when working across wards. This resulted in their feeling isolated on their home wards.
- The lack of occupational therapy and physiotherapy staff meant that they could not work exclusively on one ward. Due to limited numbers they were required to cover at least two or three wards. This restricted their ability to work closely with one set of ward-based staff.

Recommendations

The introduction of the WBMT system into GEM has been a positive development for the Directorate. Indeed, given the nature of the changes required by this new system while continuing to deliver high quality to a diverse patient group, this initiative should be held up as an exemplar of effective change management.

This final part of the report offers a series of recommendations designed to both preserve the current strengths of this system and further enhance its overall function. These are presented in five sections: 'Interprofessional collaboration', 'Patient care', 'Triage', 'Profession-specific issues' and 'Further work'.

Interprofessional collaboration

- The WBMT system has increased the amount of time different GEM staff spend together on the wards. However, its impact on enhancing the nature of interprofessional collaboration within the Directorate has been somewhat limited. A programme of interprofessional education, focusing on the principles of teamwork and understanding other professionals' roles/responsibilities, as well as other interventions to enhance collaboration may further enhance relations between professionals. The impact of such interventions needs to be rigorously evaluated.

- The introduction of two new initiatives, the board round and the MD discharge form, have had a limited impact on interprofessional collaboration within GEM. A more active promotion of these collaborative initiatives (along with MDT meetings) by senior managers from each relevant professional group may help to enhance interprofessional practice within the Directorate. In addition, senior staff could be more active in promoting and reinforcing collaborative initiatives during periods of staff rotation. For example, they could attend MDT meetings to demonstrate to junior staff how participation in these should be managed. Increased senior medical involvement in MDT meetings would also mean that these meetings could incorporate a decision-making function, rather than being focused almost entirely on information exchange.

- Co-ordinating the timing of medical ward rounds may help to make them more productive in terms of an increased participation from other professional groups especially nurses. This would ensure that MD team can be involved in clinical decision-making, thereby further enhancing the co-ordination of patient care and patient discharge.

Patient care

- While junior medical staff are more accessible, medical decision-making can still be slow due to restricted access to senior staff on the wards. Greater access to senior medical staff, such as consultants, could increase the pace of medical decision-making on the wards.

- Given the on-going difficulties encountered with transferring patients from one medical team to another, further attention needs to be given to ways of improving the patient handover process between firms.

- The poor status of non-specialist (Category C) patients (e.g. medical teams are often reluctant to admit them, they are more likely to be based in outlying wards with limited medical team contact) senior managers could discuss ways of enhancing the status and experience such patients have within the Directorate.

Triage
- The gains of the system (e.g. patients are triaged quickly to the appropriate team) are sometimes lost during evenings and weekends when bed management is provided by the hospital site managers. A poor knowledge about the aims and principles of the WBMT system and the 'hospital-wide' orientation of these managers appear to be the root causes of this problem. Some form of educational input, as well as closer working practices and more explicit policies for these staff might be beneficial.

- In general, only two of the three triage categories (Category A - 'obligatory transfer to a specialist team' and Category C - 'need not be transferred to a specialist team') are regularly used. It may therefore be worth reducing the number of categories to A and C.

- Some medical teams attempt to 'manipulate' the triage system to maximise the number of Category A patients admitted to their home ward. This can result in tensions between teams. While such tensions are currently unproblematic, their cumulative effect may be more damaging in the maintenance of good relations between medical teams and the FRT. This aspect of the system therefore requires monitoring to ensure that any longer-term detrimental effects are minimised.

Profession-specific
- To help overcome problems related to the restricted learning experiences reported by junior staff, directorate managers may wish to explore ways of exposing these staff to a more diverse range of patient conditions.

- Some house officers noted that their work was made more difficult by the continuous flow of patient admissions under the WBMT system. Further exploration of this possible problem may be useful.

- Many junior doctors reported feeling isolated on their home ward as a result of losing the informal profession-specific networks they had developed when working across wards. Ways of addressing this issue need to be explored.

- Insufficient numbers of occupational therapy and physiotherapy staff meant that they could not work exclusively on one ward as they were required to cover other wards. This restricted their ability to work closely with one set of ward-based staff. Ways of building teams within these constraints need to be examined.

Further work
- Whilst this two-year evaluation has provided useful evidence regarding the efficacy of the WBMT system, further longitudinal research and monitoring would be helpful in assessing its longer-term impact to both staff and patients.

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Appendices

Appendix 1: Data collection tools

Observation sheet

Observer:
Ward:
Date:
Time period:

Interprofessional interactions - between whom

Nature of interactions

Frequency/length of interactions

Staff interview schedules

Phase 1 schedule

1. What is collaboration currently like with the medical teams?
2. What do you think are the reasons for introducing ward-based medical teams?
3. What advantages do you see with introducing ward-based medical teams?
4. What disadvantages do you have with introducing ward-based medical teams?
5. What impact do you think these changes will have on your work with the members of your own profession?
6. What impact do you think these changes will have on your work with other professionals? (probe for pros/cons with doctors, nurses, therapists, pharmacists, etc)
7. What impact do you think these changes will have on patients and their carers/relatives?
8. Is there anything else you would like to raise?

Phase 2 schedule

1. How are things going with the ward-based medical team/triaging system?
2. What impact has the system had on your work?
3. What do you think are the advantages of the ward-based/triage system?
4. What do you think are the disadvantages of the ward-based/triage system?
5. What impact has the system had on the work of members of your profession?
6. What impact has the system had on the work with other professionals? (pros/cons with doctors, nurses, therapists, pharmacists, CCs, social workers)
7. What impact has the system had on patients and their carers/relatives?
8. Is there anything else you would like to raise?

Issues that emerged from Phase 1 - to probe
- Medical teams – loss of corridor networks / doctors being interruptions
- Issues around transferring patients between teams
- Workload - continuous admissions
- Patient categorisation issues / C category patient problem
- De-skilling of staff
- Sharing ward space: doctors/nurses
- Nursing/medical staff attendance at MDT meetings
- Lack of beds / patient moves around directorate
- 'Charge nurse effect'

Phase 3 schedule

1. Nine months on, how are things going with the ward-based medical team/triaging system?
2. What impact has the system had on your work?
3. What do you think are the advantages of the ward-based/triage system?
4. What do you think are the disadvantages of the ward-based/triage system?
5. What impact has the system had on the work of members of your profession?
6. What impact has the system had on the work with other professionals? (pros/cons with doctors, nurses, therapists, pharmacists, CCs, social workers)
7. What impact has the system had on patients and their carers/relatives?
8. Is there anything else you would like to raise?

Issues that emerged from Phase 2 - to probe:
- Impact of new 'board round' and MD form
- Medical teams – loss of corridor networks / doctors being interruptions
- Issues around transferring patients between teams
- Workload - continuous admissions
- Patient categorisation issues
- De-skilling of staff
- Sharing ward space: doctors/nurses
- Nursing/medical staff attendance at MDT meetings
- Lack of beds / patient moves around directorate
- 'Charge nurse effect'

Patient questionnaire

1. How long have you been in hospital for this stay? (If yes, details)

2. Have you previously stayed in this hospital? (Yes/No. Details)

3a. I was able to speak to a doctor whenever I needed to
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

3b. I was able to speak to a nurse whenever I needed to
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

3c. I was able to speak to other staff (e.g. therapists) whenever I needed to
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

4a. I received all the information I needed from the doctors on this ward
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

4b. I received all the information I needed from the nurses on this ward
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

4c. I received all the information I needed from the other staff on this ward
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

5a. The doctors on this ward are willing to listen to me
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

5b. The nurses on this ward are willing to listen to me
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

5c. The other staff on this ward are willing to listen to me
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

6a. The doctors on this ward are willing to answer my questions
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

6b. The nurses on this ward are willing to answer my questions
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

6c. The other staff on this ward are willing to answer my questions
S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

7a. When I asked, I did not have to wait too long before to be seen by a doctor on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

7b. When I asked, I did not have too wait long before to be seen by a nurse on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

7c. When I asked, I did not have too wait long before to be seen by the other staff on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

8a. I had all my needs met by the doctors on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

8b. I had all my needs met by the nurses on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

8c. I had all my needs met by the other staff on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

9a. I have had to give the same information about my health to different doctors on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

9b. I have had to give the same information about my health to different nurses on this ward

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

10. Whilst on the ward the staff worked well together

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

11. Whilst on the ward staff treated one another with respect

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

12. The staff on the ward seem to keep each other informed about my care/changes to my care

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

13. I get conflicting advice from different staff about my care

S. Agree ☐ Agree ☐ Neither agree/disagree ☐ Disagree ☐ S. Disagree ☐ N/A ☐

Additional comments

Appendix 2: Details of staff interviews

Interviews			
Profession	**Baseline phase**	**Post-intervention phase**	**Follow-up**
Doctors	Consultants (n=3) Registrars (n=3) SHOs (n=2) HOs (n=5)	Consultants (n=3) Registrars (n=2) SHOs (n=2) HOs (n=5)	Consultants (n=4) Registrars (n=2) SHOs (n=1) HOs (n=4)
Nurses	Charge nurses (n=2) Staff nurses (n=7) HCAs (n=4)	Charge nurses (n=2) 4 staff nurses (n=5) HCAs (n=5)	Charge nurses (n=3) Staff nurses (n=6) HCAs (n=5)
Occupational therapists	Senior therapist (n=1) Junior therapists (n=2)	Senior therapist (n=1) Junior therapists (n=2)	Senior therapist (n=1) Junior therapist (n=1)
Pharmacists	Senior pharmacist (n=1) Junior pharmacist (n=3)	Senior pharmacist (n=1)	Senior pharmacist (n=1)
Physiotherapists	Senior therapist (n=1) Junior therapist (n=3)	Senior therapist (n=1) Junior therapist (n=2)	Senior therapist (n=1) Junior therapist (n=1)
Social workers	Senior soc worker (n=1) Junior soc worker (n=1)	Senior soc worker (n=1) Junior soc worker (n=1)	Senior soc worker (n=1) Junior soc worker (n=1)
Managers	medicine, pharmacy, Nursing, occupational therapy, physiotherapy (n=5)	Nursing, medicine, pharmacy, physiotherapy (n=4)	Medicine, nursing, (n=2)
Other staff	FRT members (n=4) Care co-ordinators (n=3)	FRT members (n=5) Care co-ordinators (n=3)	FRT members (n=4) Care co-ordinators (n=3)

Appendix 3: Project information

Potential impact of research

It is anticipated that findings from this research will have local, national and international impact. Locally, findings from this study, fed back to directorate managers, will provide them with a comprehensive insight into the effects of introducing and operating a WBMT system on staff and patients. In doing so, it will enable them to understand the new system and will assist them in maintaining and improving the WBMT system for GEM staff and patients.

Nationally and internationally, through a series of conference presentations and publications in professional and academic journals this research will provide colleagues working in similar settings with an in-depth knowledge of the effects of implementing a WBMT system. In undertaking this process of dissemination, the research will be introduced to a wide audience of managers, practitioners and academics thereby extending its possible impact in this country and abroad.

Plans to implement findings

The development of a close working relationship with directorate managers, by regular feedback of findings, has ensured that elements of this research have already been implemented. As previously noted, data gathered from an early phase of the study around restrictive collaborative practice led to the introduction of two new initiatives (a daily board round and a MD form) to attempt to improve this situation.

In relation to future plans, a presentation of an earlier draft of this report to GEM managers has resulted in the formation of a directorate steering group (including both SR and SL) to begin discussing the implementation of findings from this study. The wider dissemination of findings (via conferences and papers) may generate interest from managers based in other clinical sites. It is envisaged that both researchers will be able to assist their work and ensure that the implementation of a WBMT system can be undertaken in an effective manner.

Publications and presentations

Lewin S, Reeves S (2002) *Hospital-based interprofessional collaboration: meanings and strategies.* Annual Medical Sociology Conference, York University.[27]

Reeves S, Lewin S, Meyer J, Glynn M (2003) Evaluating the introduction of ward-based medical teams on collaboration and patient care. *Journal of Interprofessional Care*, 17:109-10.

Research training/qualifications gained during the project: None

Details of further funding

To date, one submission has been made to Barts and the London Trust Special Trustees to extend this work. The application was unsuccessful. It is anticipated that applications to continue this work will be made to both the Economic and Social Research Council and the Medical Research Council over the next few years.

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[27] This paper is currently being written up for publication.

Appendix 4: Aggregated data tables

Interprofessional interactions

		Interaction Initiated by								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with	D		21	2	1	7				
	N/HCA	62		9	5	10	2	4	1	1
	Pharm		1							
	FRT	1				1				
	CC	3	1						1	
	OT	1				1				
	PT	3	2							1
	SW	1								
	Clerk	8	1	1	1		1			
	Subtotal	79	26	12	7	19	3	4	2	2
	Total number of interactions: 154									

Summary of interprofessional interactions on the study wards in Phase 1

		Interaction Initiated by:								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with:	D		17	3	1	5	2			4
	N/HCA	44		9	3	8	4	12	1	5
	Pharm	2	7			1		1		1
	FRT	2	1							
	CC	1	1		2			2		
	OT		3	1		2		1	1	1
	PT	1	3			2				1
	SW		1							
	Clerk	7	8	1		1	1			
	subtotal	57	41	14	6	19	7	16	2	12
	Total number of interactions: 174									

Summary of interprofessional interactions on the study wards in Phase 2

		Interaction Initiated by								
		D	N/HCA	Pharm	FRT	CC	OT	PT	SW	Clerk
Interaction with	D		35	4	2	4		2		1
	N/HCA	41		8	14	25	6	15		12
	Pharm	3	3							
	FRT		1			2				
	CC	7	10		3		2	2		1
	OT	1	4			2		2		
	PT	2	12			6	2			
	SW					1				
	Clerk	6	10		2	2	1	1		
	Subtotal	60	75	12	21	42	11	22		14
	Total number of interactions: 257									

Summary of interprofessional interactions on the study wards in Phase 3

Key: D (doctor); N/HCA (nurse/health care assistant); Pharm (pharmacist); FRT (fast response team); CC (care co-ordinator); OT (occupational therapist); PT (physiotherapist); SW (social worker); Clerk (ward clerk)

Bleep data

Phase 1

Registrar	Bleep (n)
1	151
2	248
3	101
4	302
5	252
6	120
7	259
8	148
9	335
10	270
11	122
12	149
13	181
Total	2638

SHO	Bleep (n)
1	169
2	155
3	119
4	333
5	462
6	164
7	121
8	270
Total	1793

HO	Bleep (n)
1	194
2	296
3	324
4	282
5	364
6	241
7	560
8	324
9	538
10	386
11	355
12	220
13	222
14	285
15	262
16	248
Total	5101

Gr. total	9532

Phase 2

Registrar	Bleep (n)
1	110
2	133
3	198
4	252
5	184
6	116
7	300
8	110
9	202
10	282
11	178
12	130
13	188
Total	2383

SHO	Bleep (n)
1	149
2	120
3	152
4	266
5	255
6	158
7	104
8	215
Total	1419

HO	Bleep (n)
1	179
2	172
3	239
4	100
5	328
6	128
7	350
8	319
9	398
10	263
11	194
12	157
13	246
14	279
15	246
16	241
Total	3839

Gr. total	7641

Phase 3

Registrar	Bleep (n)
1	113
2	129
3	78
4	241
5	206
6	115
7	131
8	174
9	199
10	254
11	176
12	195
13	179
Total	2190

SHO	Bleep (n)
1	98
2	72
3	126
4	89
5	109
6	125
7	81
8	133
Total	833

HO	Bleep (n)
1	209
2	192
3	232
4	188
5	198
6	151
7	303
8	186
9	169
10	202
11	169
12	156
13	268
14	153
15	251
16	237
Total	3264

Gr. total	6287

Non-home ward teams with patients on the study wards

Phase	Month	Number of non-home ward teams with patients on study wards	
		Study ward 1	Study ward 2
Phase 1	Apr 01	9	10
	May 01	8	11
	June 01	10	10
	July 01	5	9
	Aug 01	10	11
	Sept 01	10	9
Phase 2	Oct 01	0	10
	Nov 01	2	10
	Dec 01	4	11
	Jan 02	1	9
	Feb 02	3	10
	Mar 02	4	9
Phase 3	Apr 02	3	8
	May 02	0	7
	June 02	4	8
	July 02	3	7
	Aug 02	2	7
	Sept 02	4	5

Number of non-home ward medical teams with patients on the two study wards in Phases 1, 2 and 3

Length of patient stay

Phase	Month	Number of days
Phase 1	Apr-01	10.43
	May-01	10.19
	Jun-01	9.96
	Jul-01	8.94
	Aug-01	9.11
	Sep-01	8.49
Phase 2	Oct-01	9.00
	Nov-01	9.73
	Dec-01	9.11
	Jan-02	8.65
	Feb-02	6.48
	Mar-02	9.60
Phase 3	Apr-02	9.43
	May-02	8.70
	Jun-02	9.43
	Jul-02	8.71
	Aug-02	7.66
	Sep-02	7.77
Overall average		8.97

Average length of patient stay in GEM in Phases 1, 2 and 3

Re-admission rates

Phase	Month	Number of Discharges	Number and (%) of re-admissions
Phase 1	Apr-01	492	49 (10.0)
	May-01	549	55 (10.0)
	Jun-01	494	37 (7.5)
	Jul-01	535	41 (7.7)
	Aug-01	505	46 (9.1)
	Sept-01	477	35 (7.3)
Phase 2	Oct-01	532	37 (7.0)
	Nov-01	530	47 (8.9)
	Dec-01	467	47 (10.1)
	Jan-02	591	56 (9.5)
	Feb-02	477	59 (12.4)
	Mar-02	528	56 (10.6)
Phase 3	Apr-02	500	41 (8.2)
	May-02	554	56 (10.1)
	Jun-02	519	67 (12.9)
	Jul-02	537	47 (8.8)
	Aug-02	519	46 (8.9)
	Sep-02	436	36 (8.3)
Total		9,242	858 (9.3)

Patient re-admissions (within 28 days of discharge) in Phases 1, 2 and 3

Patients on GEM and outlying wards

Phase	Month	Number of patients on GEM wards	Number and (%) of patients on outlying wards
Phase 1	Apr-01	871	254 (29.2)
	May-01	873	207 (23.7)
	Jun-01	874	151 (17.3)
	Jul-01	910	159 (17.5)
	Aug-01	884	176 (19.9)
	Sep-01	877	160 (18.2)
Phase 2	Oct-01	1,110	162 (14.6)
	Nov-01	1,096	180 (16.4)
	Dec-01	1,023	151 (14.8)
	Jan-02	1,038	349 (33.6)
	Feb-02	908	242 (26.7)
	Mar-02	1,021	253 (24.8)
Phase 3	Apr-02	906	218 (24.1)
	May-02	972	270 (27.8)
	Jun-02	990	229 (23.1)
	Jul-02	1,048	182 (17.4)
	Aug-02	958	208 (21.7)
	Sep-02	887	179 (20.2)
Total		17,246	3730 (21.6)

Number of patients on GEM and outlying wards in Phases 1, 2 and 3

**It is University policy that Research Reports
are scrutinised by at least two internal referees**