

Evaluating a Ward-based Foundation Year 1 (FY1) System in an Orthopaedic Setting

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SUMMARY

Background. Various models of hospital in-patient cover arrangements for junior doctors have been utilised in the United Kingdom. Some settings follow a team-based system for junior doctors and some a ward-based system. The aim of this study was to determine staff's satisfaction rates with regard to a ward-based system for Foundation Year 1 (FY1) doctors in relation to continuity of patient care and doctors' training.

Material and methods. The Orthopaedic department of a District Teaching Hospital in the United Kingdom moved to a ward-based system for the FY1s from a previous team-based system. A questionnaire was administered to FY1s, nursing staff and senior doctors asking their satisfaction rates.

Results. 42 practitioners were questioned. They included 15 FY1s, 15 ward nurses and 12 senior doctors. 73.3% of FY1s were satisfied with the ward-based system with regard to continuity of patient care and 40% of them were very satisfied/satisfied with it with regard to achieving training objectives. All nurses, 66.7% of FY1s and 66.7% of senior doctors were very satisfied/satisfied with the ward-based system for achieving service provision ($p=0.053$). All nurses and 60% of FY1s preferred the ward-based system ($p=0.017$). All nurses and 66.7% of senior doctors rated the ward-based system as being much better/better than team-based at achieving service provision ($p=0.028$).

Conclusions. 1. Our results suggest that a ward-based system for FY1s can be successfully implemented in an orthopaedic setting. 2. Ward-based system confers high satisfaction rates with regard to care provision and continuity of care. 3. Taking into account training needs and substitutes for structured team work would be an area for improvement.

Key words: evaluation; ward-based; Foundation Year 1 (FY1); training; patient care

BACKGROUND

The quality of care provision and outcomes in orthopaedic patients are associated with patients' characteristics (age, male gender, co-morbidities, residential status, cognitive status) but also with the system of care [1-5]. Good care can reduce mortality and there is evidence that orthogeriatric co-care can improve and substantially reduce morbidity and mortality [5-10].

Various models of hospital in-patient cover arrangements for junior doctors have been utilised within the National Health System (NHS) in the United Kingdom (UK), with some settings following a team-based system of junior doctors and some a ward-based system. In a team-based system, each junior surgical doctor (Foundation Year One doctor – FY1) is dedicated to a certain consultant and is responsible for inpatient care of all of his patients in all the wards. In a ward-based system, FY1s are not dedicated to a certain consultant but to a certain ward and that means that they are responsible for the care of the patients in this ward. In our orthopaedic setting, we moved to a ward-based system for the FY1s from a previous team-based model.

This study aimed to determine the satisfaction rates from the FY1 doctors, nurses and senior doctors with regard to the new ward-based system in relation to continuity of care and doctors' training.

MATERIAL AND METHODS

In August 2013, the Orthopaedic department of a District Teaching Hospital of the NHS in United Kingdom moved to a new system for the FY1s. The previous system consisted of a team-based model, led by a consultant with a dedicated Middle Grade (Specialty Trainee or Staff Grade), a Senior House Officer (Specialty Trainee 1/2 or Foundation Year 2) and a FY1 doctor responsible for patients spread across two trauma wards and one elective orthopaedic ward.

In the new system, FY1 doctors were distributed and dedicated to each ward for basic management and care of the inpatients of each ward. Senior House Officers and Middle Grades remained dedicated to each consultant.

A questionnaire was administered to nursing staff and senior doctors about 2 months following the introduction of the new system. A questionnaire was

also administered to 3 consecutive rotations of FY1s towards the end of their orthopaedic attachment. Each attachment was for 4 months and was comprising of 5 FY1s.

The questioned senior doctors were only permanent middle grades or consultants so that they could compare the new system with the old one. For the nursing staff, the questionnaires were distributed only to those who had worked in the orthopaedic department for more than 1 year and were full-time staff nurses or sisters working days and not only nights so that they also knew the old system and had had daily interaction with the FY1s.

All the data were kept anonymous and we had approval from the Hospital's Research and Development Department.

Statistical Analysis

Statistical analysis of the results was performed using Fisher's exact test.

RESULTS

42 members of staff were questioned. They included 15 FY1s, 15 ward nurses and 12 senior doctors.

10/15 (66.6%) of the FY1s had previous experience, 8/15 (53.3%) had previous ward-based FY1 experience and 6/15 (40%) had previous team-based FY1 experience. All the results of the responses are shown in Tables 1-4.

73.3% of the FY1s were very satisfied or satisfied with the ward-based system with regard to continuity of patient care (Table 1). 40% of the FY1s were very satisfied or satisfied with the ward-based system with regard to achieving training objectives (Table 1). All nurses, 66.7% of FY1s and 66.7% of senior doctors were very satisfied or satisfied with the ward-based system with regard to achieving service provision (Table 1, Table 2). Statistical analysis showed no significant difference between these 3 groups of professionals (p=0.053).

All nurses were very satisfied or satisfied with the ward-based system with regard to good medical care for patients, compared to 58.3% of senior doctors (Table 2). Statistical analysis showed a significantly higher proportion of nurses satisfied/very satisfied compared to the proportion of senior doctors (p=0.010).

All nurses and 60% of FY1s preferred the ward-based system (Figure 1). Statistical analysis showed

Tab. 1. FY1's satisfaction with regard to continuity of patient care, achieving training objectives and achieving service provision

	Continuity of patient care	Achieving training objectives	Achieving service provision
Very satisfied/Satisfied	11/15 (73.3%)	6/15 (40%)	10/15 (66.7%)
Neither satisfied nor satisfied	2/15 (13.3%)	2/15 (13.3%)	3/15 (20%)
Unsatisfied/Very unsatisfied	2/15 (13.3%)	7/15 (46.7%)	2/15 (13.3%)

Tab. 2. Staff's satisfaction with regard to achieving service provision and good medical care for patients

	Achieving service provision			Good medical care for patients		
	Nurses	Senior doctors	Total	Nurses	Senior doctors	Total
Very satisfied/Satisfied	15/15 (100%)	8/12 (66.7%)	33/42 (78.6%)	15/15 (100%)	7/12 (58.3%)	24/27 (88.9%)
Neither satisfied nor unsatisfied	0/15 (0%)	1/12 (8.3%)	4/42 (9.5%)	0/15 (0%)	2/12 (16.7%)	1/27 (3.7%)
Unsatisfied/Very unsatisfied	0/15 (0%)	3/12 (25%)	5/42 (11.9%)	0/15 (0%)	3/12 (25%)	2/27 (7.4%)

Tab. 3. Rating of ward-based system by staff (nurses and senior doctors)

	Achieving service provision			Good medical care for patients		
	Nurses	Senior doctors	Total	Nurses	Senior doctors	Total
Much better/Better	15/15 (100%)	8/12 (66.7%)	23/27 (85.2%)	15/15 (100%)	7/12 (58.3%)	22/27 (81.5%)
Same	0/15 (0%)	1/12 (8.3%)	1/27 (3.7%)	0/15 (0%)	2/12 (16.7%)	2/27 (7.4%)
Worse/Much worse	0/15 (0%)	3/12 (25%)	3/27 (11.1%)	0/15 (0%)	3/12 (25%)	3/27 (11.1%)

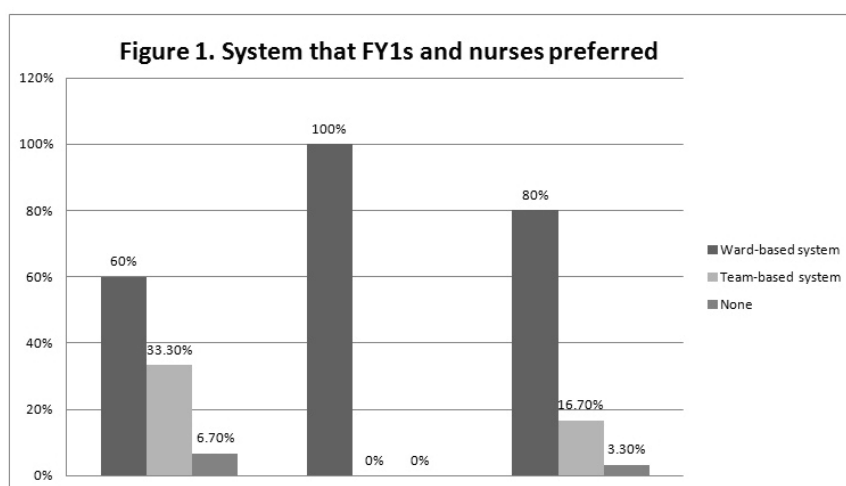


Fig. 1. System that FY1s and nurses preferred

that a significantly higher proportion of nurses preferred the ward-based system compared with the proportion of FY1s ($p=0.017$).

All nurses and 66.7% of senior doctors rated the ward-based system as being much better/better at achieving service provision (Table 3). Statistical analysis showed that a significantly higher proportion of nurses rated it much better/better compared with the proportion of senior doctors ($p=0.028$).

Finally, all nurses rated the ward-based system as being much better/better at good medical care for patients, compared to 58.3% of senior doctors (Table 3). Statistical analysis showed that a significant higher proportion of nurses rated it much better/better at this aspect compared with the proportion of senior doctors ($p=0.010$).

DISCUSSION

Research has been made and shown the benefit of combined care by orthopaedic doctors and geriatricians in an orthopaedic or any surgical setting. [5-10] However, there are not enough studies looking into the allocation of junior, or Foundation, non-specialist doctors or even the effect of altering their allocation. Various models of care have been proposed and discussed.

The Foundation Programme was set up in UK in 2005 and it increased the period of generic training from 1 to 2 years (Foundation Years 1 and 2) prior to starting specialist training. Foundation Years 1 and 2 consist of generic rotations through different medical and surgical specialties, in order to improve baseline competencies. With regard to the allocation of those

junior Foundation Year doctors, some orthopaedic settings follow the team-based system and some the ward-based. An orthopaedic team consists of a Consultant, a Middle Grade, a Senior House Officer and a FY1 doctor, who is responsible for his team's patients, who are spread across different wards and sites inside the hospital. This can impair communication between ward-based staff and doctors and can make timely medical management difficult. Impaired doctor-nurse communication and less interprofessional interactions can contribute to medical error and have negative impact in providing care [11-13]. Despite these difficulties, the team-based system is still popular in NHS. On the other hand, in a ward-based system where a junior doctor is dedicated to one ward for different surgical teams, there is easier and regular communication and interaction between the staff and faster completion of daily tasks and prompt medical review and management of any sick patient in the ward.

Concerns have been raised about the effectiveness and the quality of providing care and there were disagreements whether team-based or ward-based doctors provide better ward care and reduce morbidity and mortality [14,15]. Findlay et al. in their retrospective study identified a significant reduction in mortality in patients with proximal femoral fractures managed under a ward-based system as compared to a previous team-based (from 11.7% to 7.6%). [14] They also found an associated reduction in post-operative morbidity, with a smaller incidence of *Clostridium difficile* colitis, deep wound infection and gastrointestinal haemorrhage. However, there was no significant variation in causes of death or other post-operative complications. It is difficult to compare alternative models of care, due to the heterogeneity of patient groups and factors, outcome measures and national patterns of health care provision [16].

This study evaluated the ward-based system through questioning all the staff and the FY1 doctors. Most of the staff, including FY1s, were satisfied with the ward-based system with regard to achieving service provision. All the nurses were satisfied with the ward-based system in every aspect, but not all the senior doctors were satisfied with it with regard to good medical care (58.3%). All nurses preferred the ward-based system, whereas 33.3% of the FY1s preferred the team-based one.

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The fact that all the nurses were satisfied in every aspect along with their comments points the superiority of the ward-based system with regard to completing daily tasks, doctors' accessibility and prompt reviewing of patients for medical reasons.

There were some concerns from the doctors for their training objectives. The loss of team structure and less available hours for theatre or clinics were their comments and concerns with regard to ward-based system. It is important, though, to note that even though the classical team of a consultant, a middle grade, a senior house officer and an FY1 is not present, the wider team can be applied. These drawbacks can also be overcome by good and rotational reallocation of the doctors more efficiently in the department and with regular daily senior supervision and ward rounds, rather than replacing their roles with medical specialists. Fulfilling the training objectives can also be an issue even in a team-based system. Some FY1s also pointed out the need and the better outcome when there is a pair of doctors covering each ward; so when applying the ward-based system it seems more efficient when a pair of doctors cover an individual ward. Further research could also help assess and compare the efficacy of these different systems of care and their educational impact.

The main limitation of the study is that we did not take into account other factors which might have varied during the study, like orthogeriatric cover. Nevertheless our questionnaire was specific in what was answered.

CONCLUSIONS

Our results suggest the following:

1. A ward-based system for FY1s can be successfully applied in an orthopaedic setting.
2. It confers high satisfaction rates with regard to care provision and continuity of care.
3. Taking into account training needs and substitutes for structured team work would be an area for improvement.

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