European Working Time Directive: how to improve cardiothoracic training for SpRs and SHOs

Adam Szafranek, Mohamed M. Yusuf, Piotr Olszówka, Heyman Lucraz, George Dimitrikikakis, Peter A. O'Keefe

Department of Cardiac Surgery, University Hospital of Wales, Cardiff, UK

Kardiochirurgia i Torakochirurgia Polska 2008; 5 (2): 203–207

Abstract

Objective: Reduction in surgical training time due to EWTD mandates a review of the use of training time. The activity of cardiothoracic SpRs on the Cardiac Intensive Therapy Unit (CITU) was audited.

Aim: Study aims were to identify any potential benefits in cardiothoracic training, and to investigate mechanisms of communication between CITU staff and overall effect on patient care.

Method: All calls from the Cardiac Intensive Therapy Unit (CITU) to a surgical resident were assessed by nurses and surgeons (n=120). All calls were classified as: routine (predicted, non-urgent), urgent (non-life-threatening) or emergency (surgical, life-threatening).

A dedicated questionnaire based on the most common postoperative complications was devised to examine knowledge of CITU staff (surgical and anaesthetic Specialist Registrars (SpRs), surgical Senior House Officers (SHOs) and CITU senior nurses). Results were analyzed and statistical comparison was made using T test.

Results: Most calls during the day were routine (n=97, 81%). Urgent calls (n=18, 15%) were less common; most were during the night (n=13, 73%). In 5 cases surgical attention was necessary (4%) and in 2 a cardiothoracic SpR needed to be involved taking the patient to the theatre (1.6%). There was a significant difference in the nature of calls between night and day.

There was a statistical difference in results of the questionnaire between SHO and other groups ($p<0.01$).

Conclusions: Our study indicated that there is no need for cardiothoracic SpRs to be resident on the CITU during the daytime. For surgical SHOs there is an opportunity to improve critical care knowledge and skills. Support of the anaesthetist and senior nursing staff can provide safe patient care at the CITU.

Key words: European Working Time Directive, EWTD, Cardiothoracic training, CITU.

Streszczenie

Wstęp: Ograniczenie dopuszczalnego tygodniowego czasu pracy wkrótce obejmie wszystkie kraje członkowskie Unii Europejskiej. W naszej pracy chcielibyśmy podzielić się doświadczeniami z Wielkiej Brytanii obejmującymi szkolenie podstawowe (poziom SHO) oraz specjalistyczne kardiochirurgiczne (poziom SpR).

Cel: Celem pracy było uzyskanie informacji na temat jakości szkolenia młodych chirurgów i kardiochirurgów na oddziale intensywnej opieki pooperacyjnej (OIOP).

Metody: Przez okres 3 miesięcy praca rezydenta (SpR) na OIOP-ie była monitorowana. (n=120). Wszystkie wezwania były rejestrowane i oceniane ze strony pielęgniarskiej i lekarskiej. Podzielono je na trzy grupy: rutynowe (przewidywalne), pilne (bez zagrożenia życia) oraz nagłe (chirurgiczne, zagrożenie życia chorego). Specjalny test sprawdzający podstawową wiedzę z zakresu opieki pooperacyjnej u chorych kardiochirurgicznych został opracowany i wszystkie osoby zajmujące się opieką pooperacyjną zostały poddane ocenie (konsultanci kardiochirurgii i anestezjologii, kardiochirurgiczni i anestezjoligiczni rezydenci (SpR), chirurgiczni rezydenci (SHO) oraz personel pielęgniarski).

Wyniki: Większość wezwań w czasie dnia była rutynowa (n=97, 81%). Pilne wezwania (n=18, 15%) były mniej częste, większość miała miejsce w nocy (n=13, 73%). W 5 przypadkach obecność chirurga była niezbędna (4%), a w 2 przypadkach rezydent kardiochirurgii musiał pacjenta ponownie zabrać na salę operacyjną (1,6%). Waga wezwań różniła się pomiędzy nocą a dniem.

Rezultaty testu wykazały znaczącą różnicę w wiedzy pomiędzy młodszymi chirurgami (SHO) a pozostałym personelem.

Wnioski: Nasze badanie wykazało, że nie ma potrzeby, aby w ciągu dnia rezydent kardiochirurgi przebywał stale na OIOP-ie. Młodsi chirurdzy (SHO) mają okazję zapoznać się z intensywną terapią i wyrobić umiejętności w leczeniu pooperacyjnym, a otoczeni przez doświadczony zespół pielęgniarski i anestezjologiczny mogą zapewnić chorym bezpieczną opiekę. Rezydent kardiochirurgiczny powinien zapewniać pomoc w nagłych wypadkach oraz w nocy, kiedy ilość dostępnego personelu jest ograniczona.

Słowa kluczowe: rozporządzenie Unii Europejskiej w sprawie dopuszczalnego czasu pracy, szkolenie kardiochirurgów.

Address for correspondence: Adam Szafranek, 38 Beaufort Square, CF242UA Cardiff, UK, e-mail: asza@mac.com

Introduction

The European Working Time Directive (EWTD) is both a challenge and an opportunity for the health authorities to modernize their services. Since 2004, this health and safety legislation has been extended to apply to doctors in training, who have traditionally worked long hours and provided out of hours medical cover. EWTD limits working hours to 58 per week with entitlements to daily and weekly rest breaks as well as a maximum shift length of 13 hours [1-3].

Reduction in surgical training time due to EWTD mandates a review of the use of training time. Use of rules of EWTD in practice reduced time spent in the theatre by a surgical trainee by 25% and overall hours from 21000 to 7500 during a 6-year training programme [4].

The shift rota system limits are also based on the traditional consultant 'surgical firm' structure. All these disadvantages of introduction of EWTD force us to find possibilities to optimize training and adjust it to the new time conditions.

We wanted to study surgical cover on the CITU during 24 hours, to find out at which level of training it is beneficial for residents and can be used for cardiothoracic and surgical education.

The activity of cardiothoracic specialist registrars (SpRs) allocated to the Cardiac Intensive Therapy Unit (CITU) was audited.

Study aims were to identify any potential benefits in cardiothoracic and surgical training on the CITU, and to investigate mechanisms of communication between CITU staff and overall effect on patient care [5, 6].

Materials and Methods

The medical audit was undertaken during October and November 2005 as part of the clinical audit of the University Hospital of Wales. During two months of study all calls from the CITU to cardiothoracic SpRs (allocated to the CITU) were monitored and assessed by nurses and surgeons on call (n=120). All calls were classified as: routine (predicted, non-urgent), urgent (non-life-threatening) or emergency (surgical, life-threatening). One minute from call to answer was classified as "good", two to three minutes as "late" and more than two minutes as "no answer".

There were special forms available for nurses and surgeons allowing them to quickly assess type and time of response to the call by simply ticking the box. The second part of the form was intended for any comments (Fig. 1).

All the forms were collected and data were stored. In the case of any doubts information was discussed and clarified with the hospital switchboard.

The second part of the study was created to find the group of residents who obtain the greatest benefit of being allocated to the CITU without compromising patients' safety. A dedicated questionnaire based on the most common postoperative complications was devised to examine knowledge of CITU staff (cardiothoracic and anaesthetic SpRs, surgical senior house officers (SHOs) and CITU senior nurses). Questions were related to routine postoperative management as well as to emergency life-threatening scenarios. All questions (n=30) were based on the "Manual Of Perioperative Care In Adult Cardiac Surgery" by Robert M. Bojar (Blackwell Publishing 2005) as well as on our own experience, and were aimed at checking practical patient safety rather than theoretical knowledge [7].

Results of tests were analyzed and statistical comparison between the groups was made using Student's T-test.

Results

97% of responses to calls were "good". Twice answers to calls were "late" (2%) and one time "no answer" was recorded (Figs. 2 and 3).

Most calls were routine (82%), especially during the day (95%). Routine calls during the night were 75% of all night calls (Figs. 4 and 5).

Urgent calls (n=18, 15%) were less common; most were during the night (n=13, 73%). In 5 cases surgical attention was necessary (4%) and in 2 a cardiothoracic SpR needed

NUMBER: (fixed number for every form)

Date and hour:

Answer:

1. Good (1 min) [ ]
2. Late (1-2 min) [ ]
3. No answer (>2min) [ ]

Call type:

1. Emergency (patient is unstable) [ ]
2. Urgent (surgical attention is needed) [ ]
3. Advice (no need for surgical presence on CITU) [ ]

Comments:

Fig. 1. CITU form for nurses and doctors

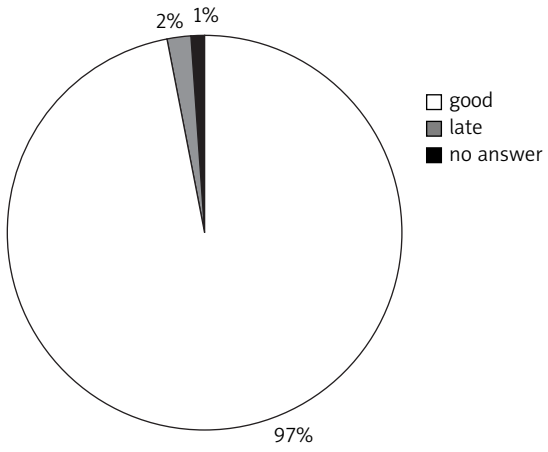

Fig. 2. Time period from call to answer (n=120)

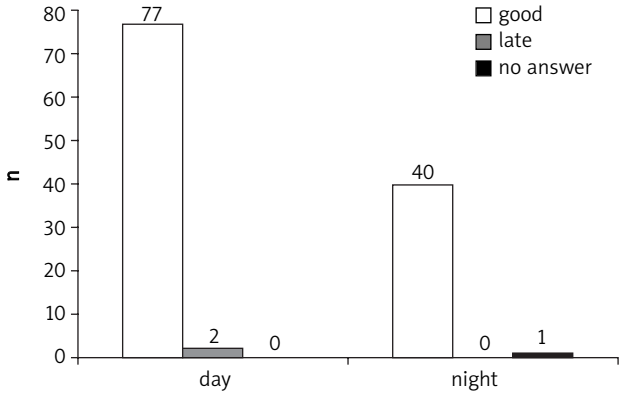

Fig. 3. Time period from call to answer (n=120)

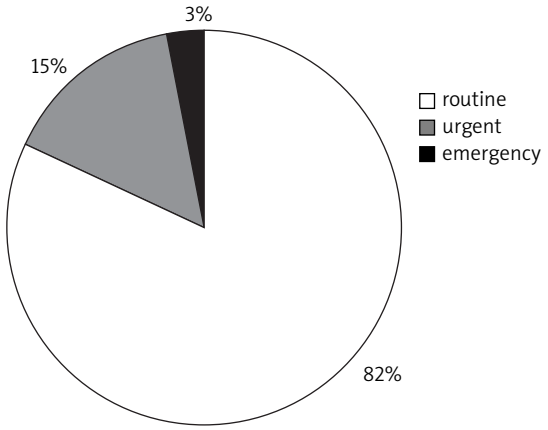

Fig. 4. Reason for call (n=120)

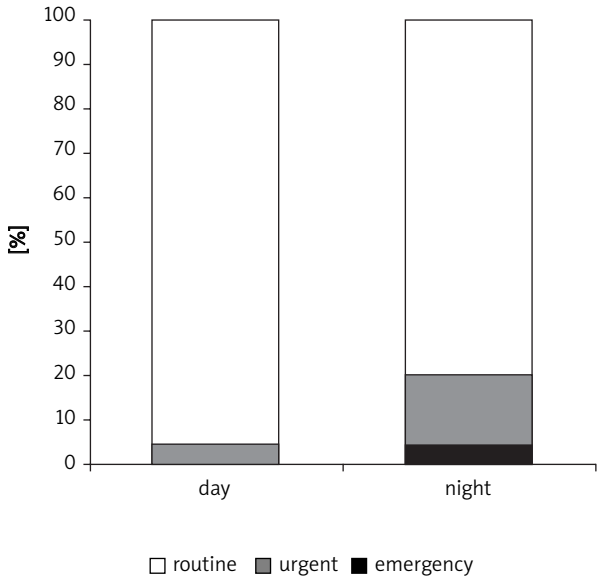

Fig. 5. Reason for call (day/night)

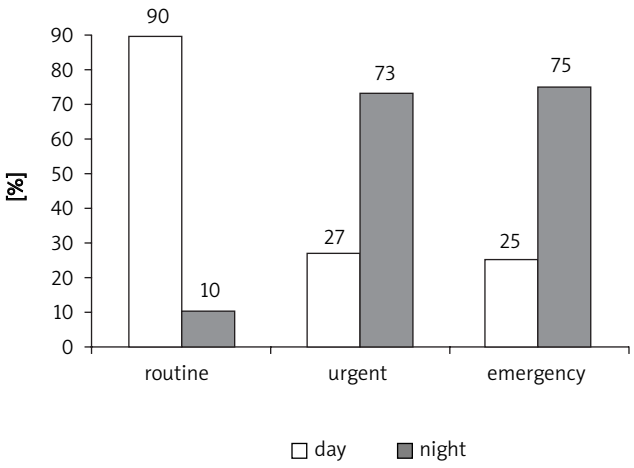

Fig. 6. Reason for call (type of call)

to be involved taking the patient to the theatre (1.6%). There was a significant difference in the nature of calls between night and day; more than 70% of all calls during the night were urgent or emergency (Fig. 6).

The largest numbers of routine calls at our CITU during 24 hours were noted between 8am and 12am and the second time around 5pm. For urgent calls higher activity was observed between 8pm and midnight (Fig. 7).

In the CITU knowledge test there was a statistical difference in results of the questionnaire between SHOs and other tested groups ($p<0.01$) (Fig. 8).

Discussion

There is very good communication between staff at our CITU. In two months of study there were only two "late" answers and one "no answer" for calls from the CITU and in all three cases there were prompt explanations of those.

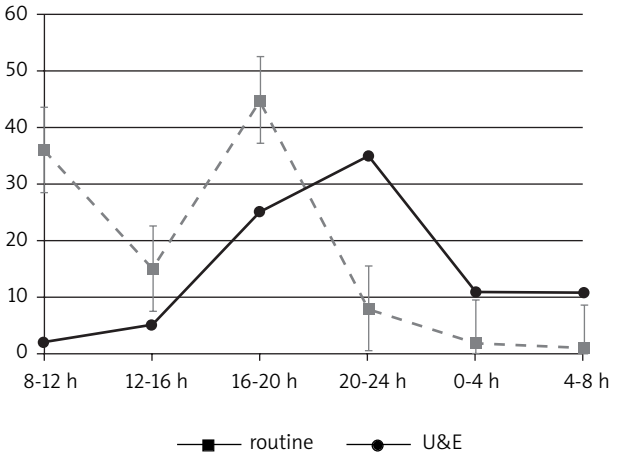

Fig. 7. Number of calls during the day and night (24 hours). U&E – Urgent and Emergency, h – hour

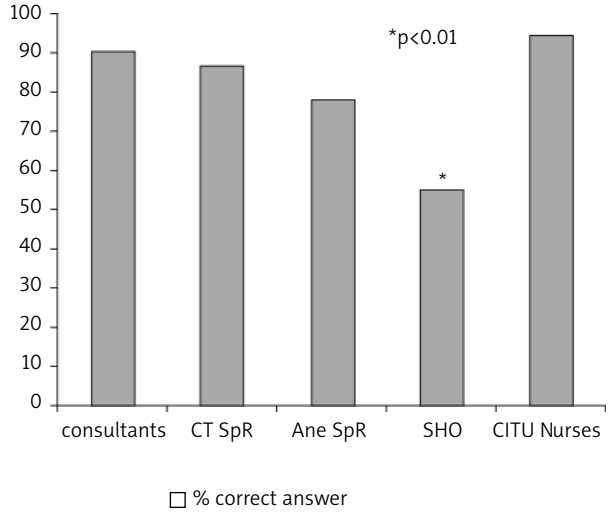

Fig. 8. Results of CITU test. CT SpR – Cardiothoracic Specialist Registrar, Ane SpR – Anaesthetist SpR, SHO – Surgical Senior House Officer, CITU – Cardiac Intensive Treatment Unit

At our CITU together with the cardiosurgical SpR on call there is also an anaesthetist SpR available 24 hours a day who can help in situations when the second person is urgently busy in a different place.

From the higher frequency of calls in the morning (8-12am) and afternoon (5-8pm) we conclude that this is a time of decisions made first during the "main" anaesthetic ward round and the second time by a change of on-call medical staff. We believe that a routine of patient care on the CITU is crucial and reduces the number of predictable mistakes; therefore our observations were encouraging.

Our results showed that most of the calls to the surgeon allocated to the CITU during daytime are routine. The morning ward round done by the consultant anaesthetist and cardiothoracic SpR is sufficient to provide most important decisions for patients for the next couple of hours. In the rest of the daytime minor decisions are made and if necessary there is always senior medical staff available during these hours. The situation changes in the late afternoon when only one cardiothoracic resident on call stays in hospital and he is responsible for all patients early and late after surgery. The number of urgent calls increases and important decisions from the patient treatment point of view need to be made. Therefore during the night time only the cardiothoracic SpR should be responsible for the CITU. There is no place for inexperienced surgical SHOs or SpRs to be in charge of postoperative patients.

Our short test checking basic postoperative care knowledge showed a significant difference between surgical SHOs and the rest of staff working on the CITU. There was no difference between cardiothoracic and anaesthetist SpRs and senior nursing staff. We believe that the group of junior doctors will benefit the most from time spent on the CITU. Trainees are involved in the decision-making process for postoperative and chronic patients.

The most important answer from our test was that determining the threshold of calling for "senior help" is done not only by doctors but also by nurses. Their knowledge of basic dangers for patients is very high and should be used in training of junior CITU staff. It is comforting to work knowing that our CITU staff fulfils such high standards of knowledge and can provide excellent care for our patients.

From the cardiothoracic residents' side we do not want to say there is no place for them to be involved in patient care on the CITU. On the contrary, we would like to point to the importance of finding the right time during the whole training process when the benefit of work on the CITU is really important. We know that the consultant and his residents will see all patients who had surgery and crucial decisions will be made. However, during the daytime first and second year cardiothoracic and all surgical residents together with anaesthetist SpRs and CITU nurses can safely take care of patients post cardiac surgery and provide prompter care.

For the first group CITU knowledge is necessary in their future career as cardiac surgeons. Improvement needs to be achieved before entering further parts of surgical training especially in terms of everyday management of postoperative patients.

For the surgical resident or SHO work on the CITU is a unique opportunity to familiarise themselves with intensive care at such an advanced level. Surrounded and supported by experienced staff, they are able to be fully involved in patients' treatment and improve their skills and knowledge.

There is a lot of controversy concerning how to achieve good junior training during EWTD, and we also believe that surgical quality of new residents finishing training will be different to those who finish before. In the face of continuing influence of politics and media on medicine and the long legislative process in all EU committees there is no hope for my generation of trainees to change the present system before we finish our training. We have to try to find ways of changing the view of decision making people in the EU who apply standard rules to every aspect of our lives without taking into account the diversity of special conditions [8,9]. There are many organisations including the Royal College of Surgeons of the UK and Ireland that are making efforts to point out the problems in reducing training hours, but usually EU commissions need a long time to change existing law [3]. A second option for us is to actively participate in optimization of existing training to new rules and achieve as much as possible for us trainees, for our senior and junior colleagues, and of course for patients.

Final Conclusions of our CITU audit

There is very good communication between staff on at CITU.

Sufficient surgical cover is available for cardiothoracic patients on the CITU.

There is no need for CT SpRs resident on the CITU during the daytime (8-5pm).

SHOs can be resident on the CITU during the daytime.

Support of an anaesthetist, CT SpR on call and senior nursing staff can provide safe patient care.

Post Audit Recommendations

The allocation rota was changed.

SHOs are allocated to the CITU during daytime.

There is a cardiothoracic SpR on call available (24 hours) for any queries.

One cardiothoracic SpR on call bleep accessible from the switchboard was introduced from December 2005.

Thank you to all medical staff working at CITU University Hospital of Wales in Cardiff.

References

1. WTD Expert Group (co-ordinated by DH (HRD WTD branch), The Department of Health; A Compendium of Solutions to implementing the Working Time Directive for Doctors in Training from August 2004; www.dh.gov.uk/HumanResources-AndTraining/WorkingDifferently/EuropeanWorkingTimeDirective/fs/en
2. BMA, Regional Junior Doctors Committee; A guide on the EWTD for junior doctors; BMA 2004; www.bma.org.uk/ap.nsf/Content/TimesU
3. The Royal College of Surgeons of England; EWTD; http://www.rcseng.ac.uk/service_delivery/ewtd
4. Szafranek A, Luckraz H, Kolowca M. Cardiac surgery training in the United Kingdom; Journal of Polish Society of Cardiothoracic Surgeons 03/2006.
5. Flynn M, Reddy S, Shepherd W, Holmes C, Armstrong D, Lunn C, Khan K, Kendall S. Fast-tracking revisited: outine cardiac surgical patients need minimal intensive care. Eur J Cardiothorac Surg 2004; 25: 116-122.
6. Ascione R, Reeves BC, Pano M, Angelini GD. Trainees operating on high-risk patients without cardiopulmonary bypass: a high-risk strategy? Ann Thorac Surg., 2004; 78: 26-33.
7. Bojar RM. Manual Of Perioperative Care In Adult Cardiac Surgery. Blackwell Publishing 2005.
8. European public health alliance. The ECJ considers on-call duty as working time;http://www.epha.org/a/2205
9. European public health alliance; ECJ to rule on UK's implementation of European Working Time Directive; http://www.epha.org/a/2125