Working time directive shift patterns may improve care

Enrto—The reports of the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) focus on reducing surgical morbidity and mortality through minimizing "after midnight" operating to absolute emergencies and increasing senior input into cases. Acceptor waiting times for such surgery also exist—those is, emergencies (American Society of Anesthesiologists (ASA) score of 4-5) <1 h, urgent (ASA score 1-3) <24 h. Rota changes as a result of the European working time directive potentially influence efficiency in theatre.

Our institution provides a 24 hour emergency operating theatre for urgent or emergency surgery. Anaesthetic cover during daytimes, Monday to Friday, is by consultants. Out of hours and weekend cover is from a two tier trainee rota (compliant with the directive) with on-call support from consultants. Before March 2004 the trainees worked a non-resident 24 hour on-call rota. To assess emergency theatre use we performed a prospective audit, comparing two three month periods before and after working under the new directive: December 2003-February 2004 and April-June 2004. During the second audit cycle, trainees' roles were extended to overnight preoperative assessment of urgent cases. Data included ASA status (1-3 or 4-5); start times “daytime” (08.30-17.59), “evening” (18.00-23.59), and “after midnight” (00.00-08.29); median waiting times before surgery; median time for “first case of the day” (08.30 being "start of the day"); and seniority of care (anaesthetic and surgical).

We used the χ2 test and Fisher's exact test to analyze contingency tables comparing start times and seniority of medical staff (where n < 5) with two tailed probability. We used the Mann-Whitney U test to compare median waiting times for surgery (we regarded P < 0.05 as significant).

Numbers were comparable (n = 195 v n = 191). Evening operating (18.00-23.59) and median waiting times for patients with an ASA score 1-3 were significantly reduced (P = 0.033 and P < 0.0001, respectively). Anaesthetic care directly from a consultant was significantly increased (P < 0.0001). Median start changed from 11.00 to 09.30, consultants previously performing preoperative assessment in this period (table).

Working and overnight preoperative assessment under the European working time directive improved use of the emergency theatre and care for patients. No reduction occurred in cases operated on after midnight. Case mix (immediate life, limb, organ threatening conditions) indicates that such surgery was appropriately timed.

The directive is aimed at minimizing adverse effects of fatigue, but potential for swapping one unsatisfactory situation for another exists: reduced continuity of care and reductions in case mix limiting experience. This audit adds to debates surrounding the directive. It was associated with improved care as judged by recognised guidelines and in addition it potentially provides "through the night" training opportunities in communication and leadership. The non-resident nature of previous rota prevented any regular overnight perioperative care except in "true" emergencies. Now trainee anaesthetists can take the lead in initiating preoperative management.

Limitations to our audit include observer bias and lack of blinding creating positive reinforcement of the importance of theatre use. Alternatively this could be cited as improving care through increased staff awareness and communication between specialties. Disturbances to patients through being woken are balanced by improved preoperative assessment, reduced waits (potentially reduced starvation times), and subsequent consultant care.

Patients being assessed preoperatively by one anaesthetist and cared for by another also deserve mention. National guidelines regarding standardisation and documentation of handovers of clinical responsibility would be welcomed. The process may have to be modified pending guidance. Specific analysis of delays would also enhance future work—for example, absolute staff availability, adequacy or availability of investigations, portering, etc.

Management of patients improved after work patterns and overnight preoperative assessment were introduced according to the European working time directive. This was associated with the advantage of two tiers of anaesthetic trainees. To introduce (and enhance) such improvements, assessment of current practices in individual centres is necessary—for example, actual emergency workload, number of on-call tiers, presence or absence of emergency departments, timing of cases, and ‘overnight’ commitments of anaesthetic teams (such as consideration of anaesthesia and critical care in managing non-surgical patients), impact of restructuring of postgraduate medical training, and perceptions of flexible working held by healthcare's non-clinical stakeholders.

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