MEDICAL PRACTICE

Hospital Topics

Shift system for senior house officer on call duties on a neonatal intensive care unit

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Abstract

To reduce the number of hours that senior house officers in the neonatal department at Southmead Hospital, Bristol, have to work continuously a new on call rota was devised. The rota changed the traditional one in three system of 24 and 32 hour periods on call to one with two shifts each day, and it spread the workload more evenly among the personnel. The continuity of care of the patients was improved, no extra staff were recruited, and the new system was favoured by senior and junior medical and nursing staff.

Introduction

In many neonatal units in regional centres at least four paediatric senior house officers are employed to look after the infants in intensive care and in special care, to attend problem or high risk deliveries, and to look after normal babies in the postnatal wards. Until 1986 the on call duties at Southmead Hospital, Bristol, were arranged in a traditional way with all junior medical staff normally present during weekday working hours, and a single doctor remaining on call overnight and at weekends. These duties were

shared in one in four or one in three rotas. During the day the doctor due to be on call that night would be responsible for the babies in intensive care while the others would share the remaining duties.

Method

A new rota was devised in which two doctors provide the care of the babies in intensive care for a seven day period, one doing 12½ hour day shifts and the other 14 hour night shifts, with an overlap allowing sufficient time for morning and evening handovers (table).

Timetable for senior house officer shift system

Week	Dayshift (1)	Days (2)	Nightshift (3)	Days (4)
Monday-Thursday	0830-2100	0830-1700	2030-1030†	0830-1700
Friday	0830-2300	0830-1700	2230-1430†	0830-1700
Saturday	0830-2300		2230-1430†	
Sunday	0830-2300		2230-0830†	
Total hours worked	93·5	42·5	98	42·5

*The four senior house officers rotate through the system in sequence (1) to (4).

†Next day.

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The other two doctors work a normal five day week in the labour suite, the special care unit, the lying in wards, and in the outpatient department. They also prepare material for presentation and teaching sessions during that week but do not have any night time on call duties. Each week of shift work is followed by a week working normal hours.

Five senior house officers are employed and contracts are normally for six months. At any time at least four senior house

officers are present and one is usually away on study or annual leave. There is no necessity, therefore, to employ locums or to assume extra duties in colleagues' absence. The continual presence of at least four senior house officers is essential to the new rota. The maximum number of hours worked in any week is reduced from 103½ to 98, and the mean from 72 to 69. The longest routine period of continuous duty in the old system was 32½ hours. In the new rota it is the night shift, 14 hours on week nights, and 16 hours at weekends. Once a month a 19 hour shift is worked on the changeover from nights to days.

Discussion

Many junior doctors work long hours and reform has been slow. Our shift system shows one way of improving working practices which benefit patients and staff. It has been tried for one year and works well in a neonatal unit.

Shift systems are the accepted norm in many walks of life where a 24 hour service has to be provided, and they are traditional for nurses and other health service staff. They have also been widely used for medical staff in other countries and in the United Kingdom, particularly in accident and emergency departments. One of their main advantages is that they limit the period of continuous duty and thus protect staff and patients from the deleterious effects of excessive fatigue and lack of sleep on staff performance.

The fact that sleep deprivation causes progressive deterioration in the ability to perform simple tasks in terms of vigilance, motivation, and emotional stability and that it ensues from traditional on call rotas are well documented.^{1,2} The adverse effects of lack of sleep on the performance of junior medical staff has been shown directly³ and several psychopathological symptoms have also been observed.⁴ Askan and Raham have reviewed the sparse literature on the subject.⁵ The recognition of increased accidents among tired personnel operating vehicles, trains, aeroplanes, and nuclear power stations has led in some instances to legislation to regulate working practices.⁶ Furthermore, studies have shown higher mortality in neonatal intensive care units at night and at weekends.^{7,8} Several factors contribute to this mortality, but fluctuations in staffing levels and seniority, and poorer performance at night, particularly when exacerbated by sleep deprivation, are probably among them. Studies have assessed the outcome of different working schedules among nursing staff,⁹ but no one has looked objectively at the effects on patient care or staff satisfaction of changing traditional working practices of junior medical staff.

In major neonatal units it is common for the duty senior house officer to be continuously up and active when on call at night. Our new rota should improve the quality of care provided at this time as he or she will be less tired. When it is quiet during the night shift the senior house officer is able to complete routine examinations and annotation of the records, do the early morning blood tests for which there is little time later in the day, study, or even sleep.

Before the new system was introduced, a different senior house officer cared for the infants on the neonatal unit and the lying in wards on each day of the week. Now continuity is provided for seven day periods so that the doctors know the patients better and the nursing staff know to whom to refer problems.

VIEWS OF STAFF

The nursing staff think that the introduction of a shift system for junior medical staff working in acute specialties is logical, and the nurses on night duty particularly favour the new scheme. Because they are working with the same doctor for seven nights in a row this continuity makes them feel less isolated and more part of the team. The doctor who is on the wards all night is readily available for consultation about problems and the nurses no longer have to worry about putting things off until morning or repeatedly waking up a sleeping and sometimes irritable senior house officer. Consequently problems are dealt with more speedily. The nurses have also

expressed greater confidence in the doctors' ability to deal with problems.

The senior house officers think the shift system much better than a one in three rota on a busy unit. As one of them put it, "The shorter working hours mean that you are much less knackered." On smaller units with less night work, however, the one in three rota may be preferable. During the week of night duty social life has to be put in abeyance.

The registrars and consultants have noticed an improvement in the quality of note keeping and in the clarity with which cases are presented and problems identified on the morning rounds. Parents, especially fathers, who may be able to visit only during the evenings have found it helpful to have the same doctor on duty each night to explain their baby's progress.

The only problem that we have encountered is one familiar to our nursing colleagues, namely, the difficulty of changing from a day time to a night time work routine. This has to be balanced against prolonged hours of continuously working day and night.

The new rota needs careful advance planning for bank holidays and leave throughout the six month period. It would have the same merits of improved quality and continuity of care in any hospital department where the demands of night and weekend on call are substantial, including intensive care units, emergency departments, and general wards with many acute medical or surgical admissions. This type of rota could also be modified to reduce the total number of hours worked—for example, by allowing time off after working nights—without loss of continuity and quality of care. This may become possible in the future if circumstances allow for the introduction of more balanced and appropriate patterns of medical staffing.

References

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ANY QUESTIONS

Is it advisable for a patient with anal irritation not to wash that region with soap?

No. Decades ago the view was held that washing was not a good idea for many skin diseases including eczema, impetigo, and ulcers, possibly because washing with soap is painful when the skin is cracked or fissured. Most dermatologists now recommend washing the skin as part of the treatment of all these conditions because it cleans the skin of debris and surplus inflammatory exudate and allows topical medication to reach the tissues needing the treatment. Patients with anal irritation may have scratched themselves sufficiently to produce cracks in the skin so that washing with soap may be painful, but nevertheless cleaning the perianal skin is advisable, especially after defecation, so that soiling of the skin, which can aggravate itching, does not occur. This advice is reasonable whatever the cause of the pruritus ani but is only an adjunct to any definitive treatment for the pruritus. Soap is usually the best cleanser for perianal skin, but if it cannot be tolerated then cleansing creams can be used. It is unwise to apply the soap or cleansing cream with a flannel because if the skin is tender chafing can occur and aggravate the pruritus. Either the fingers or cotton wool should be used to apply the soapy water. After rinsing the skin the area should not be dried with a towel for the same reason, but paper tissues or cotton wool may be used.—ALAN B SHRANK, consultant dermatologist, Shrewsbury.