International Experience in Doctor Work Hour Reform

I. The Australian Model

The Australian Medical Association (AMA)'s National Code of Practice - Hours of Work, Shiftwork and Rostering for Hospital Doctors was developed through a consultative process . involving all Australian hospitals, state health administrations, medical and regulatory organisations, doctors, and a range of other bodies and individuals.

The Code was adopted by the Federal Council of the Australian Medical Association in March 1999 and was implemented in 2000. Two nationwide surveys on doctors*work hour were done in 2001 and 2006 after the implementation.

Background To the Code

The code has been developed in response to long standing concerns about the impact of shift work and extended hours on hospital doctors, particularly junior doctors. The risks that fatigue and sleep deprivation create for both the individual health and safety of the doctor and for the quality of care afforded to patients are addressed in this code.

The code is one part of a broader education and awareness program to change the current individual and organisational beliefs and culture that support working hours and patterns that would be considered unacceptable in most other industry sectors.

The code has also been prepared in recognition of the responsibilities of employers and employees under Occupational Health and Safety (OH&S) legislation. In this legislative framework a safe system of work needs to be provided to protect employees and others (including patients) affected by the employers' activities.

Purpose

This code provides practical guidance on how to eliminate or minimise risks arising from the hazards associated with shift work and extended working hours.

Scope

This code applies to all hospital employers and salaried hospital doctors.

The scope of the code is limited to hazards related to shift work and extended working hours and the effect on the health and safety of individual doctors and impacts on patient care.

Other hazards present in a hospital environment are not covered in this code and reference should be made to other legislation, standards, codes and guidance material in relation to those hazards.

Status of the Code

This code is a voluntary code developed to be compatible and consistent with OH&S legislation in each State and Territory.

A voluntary code does not have any specific legislative standing but provides recommendations for duty holders to consider in meeting their obligations. A distinction needs to be drawn between a Voluntary Code and an Approved Code of Practice that is made under relevant State and Territory legislation.

An Approved Code of Practice supports either general duties in an OH&S Act or specific duties in a regulation. Compliance with guidance provided in an approved code is not mandatory but duty holders should follow such a guide unless they have an alternative method that achieves the same safety outcome. An approved code has evidentiary status and may be used in a prosecution to demonstrate a failure to meet a duty.

A voluntary code, such as this national code, does not have evidentiary status but has legal status like all other guidance in that it contributes to "the state of knowledge" about a particular hazard or risk and the ways of mitigating that hazard or risk.

Legislative Framework

This code operates in the context of OH&S legislation that sets out a general duty of care for employers to provide and maintain a safe and healthy workplace. Legislation in most states and territories follows this formulation with the duty of care qualified by an expression such as "so far as is practicable".

Consequently, this code provides guidance on practicability in relationship to the hazards and risks associated with extended working hours.

Modern OH&S law is described as performance based, highlighting the achievement of safety outcomes rather than defining in great detail the way in which the outcome is to be achieved. This code is drafted within this framework to enable flexibility and innovation in managing risks.

Relationship of the Code to Award and Agreement Provisions

Each State and Territory has specific industrial relations provisions regulating hours of work and rostering practices. The minimum standards vary from jurisdiction to jurisdiction but nothing in the code should be read as altering these minimums. Award and Industrial Agreement provisions primarily relate to pay and penalty rates, whereas the code provides guidance on risks arising from shiftwork and extended hours.

Shiftwork and Extended Hours

The Body Clock

Circadian rhythms, which repeat approximately every 24 hours, are associated with many human functions including body temperature, hormone production and sleep and wakefulness.

Work schedules where people are expected to be awake and active at an inappropriate time in the cycle causes disruption of circadian rhythms. In addition environmental cues (like light and dark) that keep an individual's cycles on track are out of coordination.

Sleep and Fatigue

Disruptions to normal sleep routines are often associated with night shift, where the major difficulty is getting adequate, high quality, restorative sleep during the day. An extended hours sometimes combined with night work creates a similar problem. The cumulative result of these disruptions is lack of sufficient sleep, which may lead to what is called sleep debt.

Fatigue is tiredness that results from physical or mental exertion. In a hospital the need to concentrate and be on one's feet over a long period of time is likely to cause fatigue. Both lack of sleep and fatigue, individually and in combination, can adversely affect task performance levels, individual health and safety and the safety of others.

Disruption to Social and Family Life

Work scheduling will influence the availability of employees to participate in social and family activities. Shift workers find it difficult to maintain a social and family life and sometimes may neglect rest and sleep in order to be with friends or family.

Effects on Health

Continued exposure to the disruptions and dislocations created by work scheduling may have deleterious effects on the health of individuals.

Hazard Identification, Risk Assessment And Risk Control

In order to be consistent with the philosophy and approach of current OH&S law and Approved Codes of Practice, the hazard identification, risk assessment and risk control model is used in this code.

Hazard Identification

The employer should ensure that all hazards associated with shiftwork and extended working hours in a hospital are identified.

- Excessive Consecutive Hours Worked in Any One Period
- Lack of Rest Within and Between Work Periods
- Inappropriate Speed and Direction of Shift Rotations
- Irregular and Unpredictable Work Schedules
- Night Shift or Extended Hours that Lead into Night Shift
- Type of Work and Additional Workloads

Risk Assessment Guide (Based on a 7-day Period)

*Lower Risk	* Significant Risk	*Higher Risk
Less than 50 hours worked	50 to 70 hours worked	More than 70 hours worked
No more than 10 consecutive hours in any one period	Up to 14 consecutive hours in any one period	14 or more consecutive hours worked at least twice
Scheduled shift hours worked	Scheduled shift plus part of next shift worked	A full shift cycle worked of at least 24 hours.
Three or more short breaks taken during shift	One or two short breaks taken during shift	No short breaks taken during shift
Little or no overtime	More than 10 hours overtime	More than 20 hours overtime
Rostered for on call less than 3 days in 7 days	Rostered for on call duty 3 days or more in a 7-day period	Rostered on call continuously for more than a 7-day period
No night shift or extended hours into night shift	At least 2 night shifts or extended hours into night shift	At least 3 night shifts or extended hours into night shift
Minimum 10 hour breaks between work periods and 2 days free of work	Minimum 10 hour breaks between work periods and 1 day free of work	Less than minimum 10 hour break on at least two work periods and no full day free of work
Forward shift rotation and predictable cycle	Forward shift rotation but changed cycle	No stable direction or speed of rotation
No changes to roster without notice	Changes to roster through overtime and recalls worked	Roster changed so much because of overtime and recalls so as to be unpredictable
Maximum opportunity for sleep to be taken at night including two full nights of sleep.	About two-thirds of sleep able to be taken at night including one full night of sleep.	Less than half of sleep able to be taken at night and no opportunity for one full night of sleep.

* Each Lower Risk Element to be scored at 1
* Each Significant Risk Element to be scored at 2
* Each Higher Risk Element to be scored at 3

The purpose of scoring is to provide a crude but simple way of highlighting risks to doctors, to the hospital and to those dependent on both. The profile can be adjusted to add specific risk factors relevant to the type of hospital and used to establish a preferred profile that meets patient and doctor needs as well as obligations to provide and maintain a safe and healthy workplace.

Risk Control

Under OH&S legislation an employers' duty is to control risk by either eliminating the hazard or by minimising the risk associated with the hazard.

Safe Hour Roster Design

- For Interns / Residents - 38 hours per week averaged over four weeks (Lower risk category)
- For Registrars - 43 hours per week averaged over four weeks including 5 hours of training time free from service (higher risk category)
- Meal breaks - 30 minutes minimum and counted as time worked
- 28 day roster (at least) must be promulgated 14 days before commencing
- Doctor may request specific shift at least 1 week prior to roster promulgation
- 7 days notice to change roster unless emergency exists
- Doctors must not work:
    1. > 75 hours in 7 consecutive days
    2. > 140 hours in 14 consecutive days
    3. > 280 hours in 28 consecutive days

Unless Doctor gives written consent to waive this entitlement or medical emergency or disaster situation

- Days off per fortnight
    1. 3.5 days in each 2 week period
    2. 2 days must be consecutive
    3. Remainder must be 1.5 consecutive or 3.5 off (4 hours = 0.5 day)
    4. Minimum 10 hours between rostered shifts
- Rostered hours per day
    1. Maximum 16 hours
    2. Minimum 4 hours per shift
- For Registrars, 30 consecutive hours as maximum if agreed by doctor, AMA and hospital

Remuneration Packages (Incentives for doctors)

- First three hours after contracted work-hour in pay cycle (ie fortnightly) will be 1.5 times ordinary hourly rate of pay
- Remainder & Week-end will double the ordinary hourly rate of pay

Strategies to Deal with Training Concerns

A paradigm shift from traditional training concept based on quantity of patient exposure and learning by chance

1. Use of new technology with simulation Model for surgical trainee and
2. More Competencies based structured training program for trainees to compensate for the reduced work hour.

Notes: This Appendix serves as a reference only. The employment terms of doctors in Australia vary among different states and are essentially different from those in Hong Kong.

II. The British Model

Summary of the New Deal for Doctors in Training, 2000 Pay arrangements, the Working Time Directive and the Hospital at night model

A. The New Deal

The New Deal was introduced in 1991 with the aim to reduce the excessively long hours worked by junior doctors by setting out limits on working hours and minimum rest.

It set target dates for a stepped reduction in junior doctors' hours so that by 31 December 1996 the maximum contracted hours for all doctors should not have exceeded the following:

- 72 hours per week for doctors working on call rotas;
- 64 hours per week for doctors working on partial shifts and
- 56 hours per week for doctors working on full shifts.

The New Deal also set down maximum periods of continuous duty, minimum periods off duty between duty periods and minimum periods of continuous off duty for each of the new working arrangements.

To achieve this reduction in working hours and meet the requirements on duty periods the New Deal introduced a number of changes:

- The introduction of shift systems to replace, where appropriate, on call rotas.
- Cross cover from other members of staff such as consultants, fixed grade doctors, nurses, midwives and clerical staff.
- Government to provide central funding for 200 consultants and 50 staff grade posts in England 1991/92 with future funding depending on the progress made in the reduction of junior doctors' hours.
- Regional Task Forces to be set up to provide advice on working practices; suggest new ideas, facilitate change and monitor levels of compliance.

B. 2000 Pay System

A new contract and pay structure for doctors in training, agreed with the BMA, came into effect on 1 December 2000. The contract has a banding system that encourages trusts to reduce the hours and intensity of work for junior doctors by penalising the trust financially and contractually for non-compliance with the New Deal.

The intention behind this system was to ensure that trusts comply with the requirements of the New Deal while at the same time appropriately remunerating junior doctors for working long hours and or intense shifts. The necessity to ensure a reduction in the workload and working hours of junior doctors was also greatly increased by the European Working Time Directive (See Section C).

The overall package for the 2000 junior doctors' pay structure was £150 million over a three-year period depending on the NHS' success in reducing hours of work and intensity. A further £3.25 million was made available annually to assist with the implementation of the New Deal.

C. European Working Time Directive (EWTD)

The EWTD which came into force on 1 October 1998 for consultants and other career grade hospital doctors, originally excluded junior doctors. Agreement was reached in May 2000 between the European Parliament and the Council of Ministers on the arrangements and timetable for doctors in training to be included in the EWTD.

- August 2004 - Interim limit of an average 58 hour maximum working week and EWTD rest requirements.
- August 2007 - Interim limit of an average 56 hour maximum working week.
- August 2009 - Deadline for the average 48-hour maximum working week - this could be extended by another 3 years with an interim limit of an average 52 hours maximum working week.

EWTD Rest Requirements

- Minimum of 11 hours continuous rest in every 24 hour period.
- Minimum rest break of 20 continuous minutes after every six hours worked.
- Minimum period of 24 hours continuous rest in each 7 day period (or 48 hours in a 14 day period).
- Minimum of 4 weeks paid annual leave.
- Maximum 8 hours work in each 24 hours for night workers.

SiMAP and Jaeger Cases

The SiMAP judgment in the European Court of Justice (ECJ) established that any time that a doctor was required to be in work would count as working time under the EWTD. This included being resident on-call. The outcome of the Jaeger case backed this judgment and also stated that where a doctor did not achieve their minimum 11 hours continuous rest in every 24 hour period they should get the appropriate amount of compensatory rest immediately.

Derogation

In the absence of a collective national agreement between the Department of Health and the BMA on the application of compensatory rest, the Government has chosen to derogate from a range of limits under Regulation 21 of the EWTD. This allows maximum flexibility, primarily around the otherwise absolute requirements of minimum daily and weekly rest periods, subject to compensatory rest on a basis to be agreed locally. This derogation does not preclude a national collective workforce agreement at some point in the future.

D. The Hospital at Night Model

The Hospital at Night model proposes that the way to achieve effective clinical care at night is to have one or more multidisciplinary teams working in the hospital, who between them have the full range of skills and competences to meet patients' immediate needs. The project was born out of an original idea by Dr Elisabeth Paice, Dean Director for London, who was concerned by the deleterious effects on patients and junior medical staff of traditional models of nighttime working. To reduce the working hours of junior doctors in order to comply with the European Working Time Directive, the Hospital at Night model changed traditional medical working practices out of hours from firm-based to multidisciplinary, competences-based working practices.

The Hospital at Night project has gathered a significant body of evidence3 (20,000 clinical episodes across 11 trusts) about what happens in the hospital during the out-of-hours period. This evidence provides strong support for a competences-based, multidisciplinary approach to staffing the hospital at night. The evidence also signals opportunities:-

- To move a significant proportion of the work at night into the extended day.
- To reduce unnecessary duplication of work - especially through a reduction in multiple clerking.
- For non-medical staff to take on a proportion of the work traditionally done by doctors at night.

The Hospital at Night approach is being piloted in 4 trusts and had identified opportunities to improve the quality of patient care at night

- Improved risk assessment and prioritization of work, to match patient needs.
- Patients seen by better trained, more senior staff, fresh not tired doctors.
- Better coordinated care -between specialties and between medical, nursing and other staff.

Benefits for Staff Included

- Better information on which to base clinical and risk assessments, as a consequence of improved handover and links to critical care outreach services.
- Working in a team - decreases the sense of isolation, improves working relationships and boosts morale.

Implications for Medicine

Medical problems, arising in patients admitted under all specialties, represent the majority of the night-time workload. It will be important to ensure there are adequate staffs to manage this workload. A number of strategies are available to support the junior medical staff at night:-

- Use of doctors from other specialties - providing they have the appropriate competences.
- Use of non-medical staff - nurse practitioners and support staff.
- Reduction in multiple clerkings - in particular between A&E and medicine.

Implications for Surgery

The reduction in night-time operating significantly reduces the call upon middle grade surgical staff between 10pm and 8am, though there will still be a need for surgical opinions. There may be opportunities for hospitals to reduce the current level of middle grade cover for surgery, possibly through use of on-call arrangements from home, or surgeons covering multiple sites during the night using a network based approach.

Implications for Orthopaedics

The data we have collected shows very few calls to orthopaedic middle grades, at night. This indicates that in many hospitals, orthopaedic middle grades do not need to be part of the core night team; provided this team has the competences to safely manage orthopaedic patients, until off-site support is called in.

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