CHAPTER 7 – CHANGE IN EXISTING DOCTORS' WORK PATTERN

701 To relieve doctors from their heavy workload and ensure quality patient care and safety without affecting doctors' professional training, the Steering Committee puts forward 3 reform strategies which involve a change in existing doctors' work pattern, namely, building core-competency call teams, shift system replacing overnight on-call duties as well as introducing a structured and comprehensive multi-disciplinary handover system.

Strategy B1 - Building Core-competency Call Teams

702 Under the conventional system of work, a pool of doctors is put on call to handle clinical duties in their respective specialties at night. To better utilize the stringent workforce, HA is recommended to build core-competency call teams to take care of night-time emergency admissions and other clinical duties in the hospital. The whole concept is about creating flexible and alert teams of competent doctors who have the necessary skills to deal with the majority of problems that require immediate attention at night, with further help available within a reasonable time frame. The frequency of doctors providing cover at night will be reduced, so that their work hours can be curtailed and they can be more focused on patient care activities and professional training.

703 The core-competency call teams cannot stand on their own. Specialists on off-site call will be ready to come back to hospitals to provide support for any consultation required at night. Moreover, the core-competency call teams are supported by appropriately trained non-medical staff, who will take up from doctors some basic and easy-to-administer clinical procedures. This approach is applicable at weekday night time, throughout weekends and holidays, and even for emergency admissions during a normal working day.

Consultation: Feedback from Respondents

704 From the HA-wide communication and consultation in the past few months, the Steering Committee has gathered real concerns and valuable feedback from the management staff, Specialty Colleges and frontline clinicians ranging from Residents to senior Consultants.

705 On the one hand, few doctors were willing to cover other departments as it might imply giving away resources which might result in conflicts between the management and the frontline. There were concerns and scepticism about the level of expertise, experience and accountability of the call teams providing cross-specialty coverage at night, especially in secondary hospitals and small specialties that might need to combine night-time staff to form joint call teams. Some opined that core-competency call teams were more appropriate for the surgical than the medical stream. Moreover, the Hong Kong College of Orthopaedic Surgeons did not accept cross-specialty cover but felt that cross sub-specialty cover within the same specialty, such as the general surgery team providing cover for urology or the plastic surgery team, was agreeable with proper back-up by specialists.

706 On the other hand, since clinical services provided by tertiary hospitals were highly sub-specialized, clinicians were anxious about the competency of the call teams. Specialists currently performing on-site call duties would be taking off-site calls, and they were worried about the less direct line of accountability for patient safety. The function and purpose of off-site specialists might also be defeated if they were frequently called in for back-up support, a situation which they regarded as worse than taking on-site calls. As a result, referrals to seniors or specialists would increase and patients might face higher risks due to possible delays in referral. Respondents from certain departments, like Neurosurgery, also urged for an increase in staffing and more promotion opportunities to cater for an anticipated increase of calls in the second tier. Moreover, some Surgeons expressed that they needed to take care of a large volume of inpatient service and post-operative patients at night. They believed that core-competency call teams would not be feasible for managing patients in the surgical specialties. Furthermore, there used to be at least 2 on-site doctors supporting round-the-clock trauma call service in major hospitals, one being on first call and the more experienced one on second call. The Orthopaedic Surgeons viewed that reducing the number of on-site doctors might affect the quality of trauma service at night.

707 The management staff had expressed other concerns. To start with, introduction of core-competency call teams brought forth a radical change in the conventional mode of overnight on-call activities. The respondents expressed that immense difficulties would be anticipated in the drive for such a major reform in their respective clusters / hospitals. They also expressed that core-competency call teams would be more applicable to medium-size hospitals where clinical services were less sub-specialized and cross-specialty cover might be more feasible. There were also concerns that non-medical staff was not ready to take up the professional duties of doctors in support of core-competency call teams. Moreover, standard protocols had to be formulated and structured training programmes conducted to ensure that patient safety would not be affected under the care of core-competency call teams. Finally, all reforms should be evidence-based. The efficacy of core-competency call teams in reducing doctors' work hours while ensuring quality patient care and safety in the local setting remained to be seen.

The Steering Committee's View

708 The Steering Committee understands the concerns of clinical departments regarding the efficacy of core-competency call teams and acknowledges the concerns of frontline doctors over the quality and safety of patient care. In fact, the composition and competence of the call teams should be determined by the needs of patients. Hence, the whole concept of core-competency call teams can only be rolled out to different clusters and hospitals in phases.

709 As an initial target, the Steering Committee believes that sub-specialty call duties can be covered by doctors on general call in the same specialty, and pooling of on-call staff within the same cluster is a viable option. The core competencies of different specialties should first be identified, followed by structured training and deliberation of care protocols. This again requires the input of different specialties with the support of the Hong Kong Academy of Medicine and the Specialty Colleges.

710 Regarding patient outcomes upon implementation of the core-competency call teams, the Steering Committee is fully aware of the documented success in overseas countries. In the Hospital at Night ("H@N") programme implemented in the UK, the generic call teams, comprising both medical and surgical juniors, handled the majority of clinical cases at night. They adopted an efficient whole-team handover approach and were supported by well-trained nursing staff. The Royal Liverpool University Hospital, a teaching hospital with about 1,000 beds and serving a population of 500,000, had actually shown a reduction in critical incidents after piloting the H@N programme. More importantly, their key performance indicators on patient safety had not worsened upon introduction of the generic call teams.

711 There are also local examples of success. The Grantham Hospital has, since 2004, pooled the first-call Residents of three sub-specialties, viz., Palliative Medicine, Acute Geriatrics and Cardiology, who are all under or have already completed basic or higher physician training, into a single call-team at night with support of Consultants. The hospital management has confirmed that the concept of core-competency call teams is workable and doctors' work hours in these specialties have actually been reduced with no worsening of clinical outcomes.

712 Another local example of success can be found in Prince of Wales Hospital, where the first-call Surgeons in four sub-specialties, viz., Paediatric Surgery, Cardiothoracic Surgery, Neurosurgery and Plastic & Reconstructive Surgery, have been pooled together to provide mutual cover at night since January 2007. The call frequency of first-call doctors in these sub-specialties has been reduced from about 8 to 5 per month and there is no negative clinical outcome as a result of this innovative arrangement.

713 The Steering Committee considers that the concept of core-competency call teams is not totally new to the local medical profession and public hospitals. The concept can be put in place in phases through careful planning, identification of core competencies, structured training of doctors and clinical outcome audits in order to ensure good risk management and quality patient care and safety.

714 The Steering Committee is aware of off-site specialists' concerns over the potential increase in consultation upon introduction of the core-competency call teams. In the experience of the Department of Surgery in Prince of Wales Hospital, there has been a slight increase in the number of consultations for off-site specialists since January 2007. Yet, the change in call coverage is still considered effective, as some doctors previously on first sub-specialty call are now put on off-site specialist call. They prefer attending consultations referred by the mixed-call team to staying in the hospital for overnight on-site duties for almost 8 times a month.

715 The Steering Committee notes that similar concerns were also shared by counterparts in the UK public hospitals before the H@N programme was piloted. However, as the night team was well supported by documented clinical protocols and care pathways, there was actually no increase in unnecessary consultations. A UK expert shared that most out-of-hour emergencies were of a generic nature and rarely highly specific to the patients' specialty of admission. The skills needed on-site should thus be generic, with specialized help available within an agreed timescale. The Steering Committee is convinced that, while the core-competency call teams are not without limitations, they should be regarded as a viable solution to manage patient activities appropriately at the night time. The Steering Committee believes that the concerns over increased consultations upon setting up the night teams can be addressed after phased training of doctors and introduction of clinical protocols and care pathways to the specialties and sub-specialties.

716 Finally, to ensure adequate support for the core-competency call teams, it is necessary to reinforce team building and leadership development. Team members' roles and responsibilities should be formally agreed upon and documented, while strong leadership is required to ensure effective handover, prioritized calls to the night teams, proper recording of adverse incidents and call-in of off-site specialists at home, etc.

The Steering Committee's Recommendations

717 The Steering Committee recommends HA to implement the following measures in order to improve the medical cover at night while ensuring seamless and quality patient care through teamwork without compromising the professional development of doctors in public hospitals:

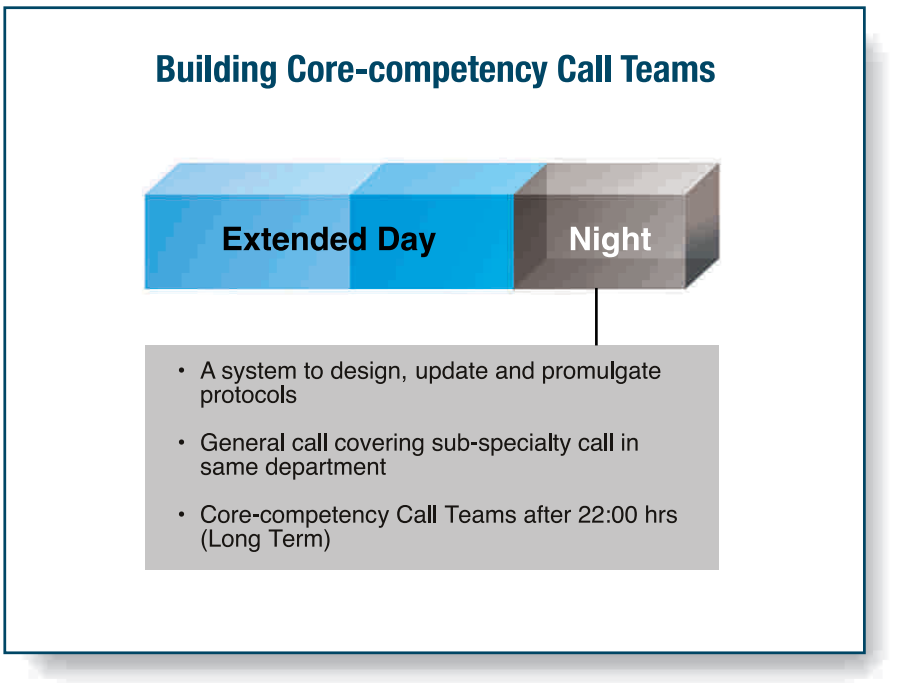
a) HA may consider working out a **system** to design, update and promulgate both **intra- and inter-departmental clinical protocols** involving multi-disciplinary professionals in order to ensure seamless and quality patient care through teamwork.

b) HA may consider optimizing the number of overnight on-call doctors required in hospitals by extending doctors **on general call to cover sub-specialty call within their own departments.** Further deliberation may be given to provide cross-specialty coverage within the same disciplines, e.g. within the medical or surgical streams, in the longer term.

c) HA may consider further exploring the option of **competency-based patient care after 22:00 hours** on weekdays and throughout weekends and holidays complemented by subsequent ward rounds by specialists to ensure quality care and patient safety. If the introduction of core-competency call teams is agreed, the teams can be phased in after staff training on core skills and competencies within the local departments.

718 The recommendations of the Steering Committee on building core-competency call teams can be summarized in Figure 7.1 below.

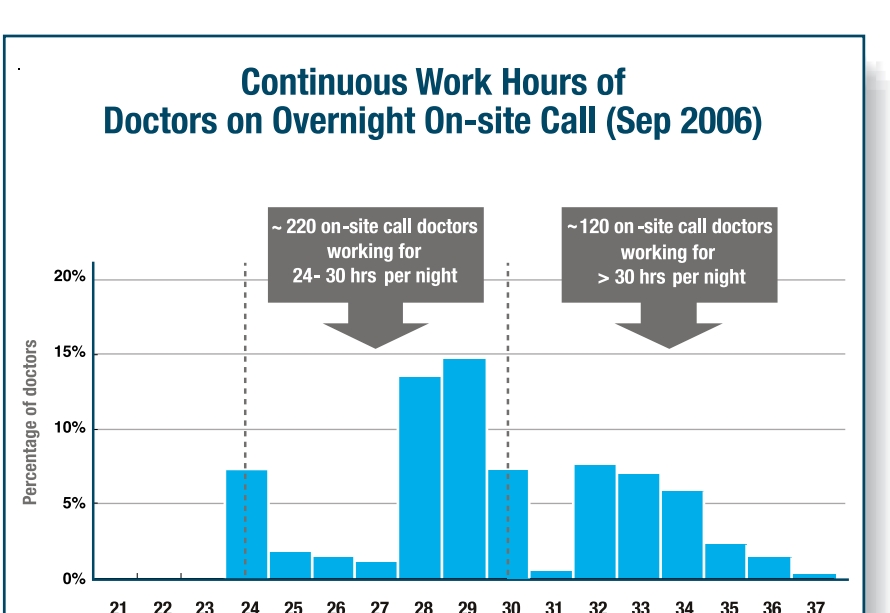
(Fig. 7.1)



Strategy B2 - Shift System Replacing Overnight On-call Duties

719 The conventional approach to out-of-hour medical staffing involves a large but scattered pool of on-site doctors in specialties or sub-specialties to cope with the competing demands from sporadic emergency admissions, medical interventions for critically ill patients, mundane monitoring and technical activities for relatively stable inpatients as well as emergency operations. These doctors are supported by tiers of off-site specialists who are on-call from home. Many a time on-site doctors have to work for long hours continuously. In a local survey conducted in September 2006, there were about 220 and 120 doctors on overnight on-site calls who worked continuously for 24 to 30 hours and more than 30 hours respectively (Figure 7.2).

(Fig. 7.2)



720 Working at night is harder than working during the day because this is the time when the human body is programmed to sleep. It results in loss of rest and increased fatigue that may directly affect performance. In general, it is not preferable for doctors to work for such long hours, even with some intermittent rest during the on-call period. Continuity of care should be well balanced with risks to patient care provided by doctors. A shift system is therefore recommended to replace the conventional on-call approach so that doctors will be less tired, feel fresher and have better work-life balance, which will bring about positive impacts on their professional training for better patient care.

Consultation: Feedback from Respondents

721 To address the issues related to prolonged continuous work hours, the Steering Committee initially welcomed the proposals of frontline doctor representatives who participated in the Strategic Planning Workshop for adopting 13 / 14 hours as the maximum continuous work hours for doctors. However, in subsequent communication rounds and the corporate consultation exercise with frontline clinicians, management colleagues and the Hong Kong Academy of Medicine, respondents were worried about the continuity of patient care, more frequent evening or night calls and inadequate training exposure for junior doctors working under the shift arrangement. These concerns were also shared by their counterparts in the UK public hospitals. It was suggested that a more flexible system should be adopted, taking into consideration the attentiveness of on-site doctors, frontline acceptance of the new continuous work hour arrangements and the service sustainability of different specialties.

722 The Steering Committee was mindful of the feedback from respondents on continuous work hours and shared the concerns of clinical specialties. In fact, the frontline doctors had given many good suggestions on the shift pattern during the consultation period. Some doctors raised that the 16-hour model would be more workable than the 13 / 14-hour one, while others suggested a practical

hybrid model of 16 hours on weekdays and 24 hours at weekends and throughout public and statutory holidays. The Hong Kong Women Doctors Association shared a similar view on the 13 / 16-hour shift but felt that it might not be applicable to weekends and public holidays. The proposed night shift system was agreeable to some respondents, provided that there were sufficient competent doctors with good handover of patients and adequate clinical support from the nursing and allied health staff. Other respondents suggested introducing mutual-cover sleep time for doctors who were on overnight on-call duties to ensure that they had higher attentiveness and concentration at work. However, to do so might entail cross-specialty call cover in small units where only one on-site doctor was available at night.

723 Many respondents raised their worries about the implications for the medical workforce upon implementing the shift system, as more doctors would be required to take on shifts and share work on public and statutory holidays. According to the prevailing policy, doctors who worked on a statutory holiday, irrespective of the duration, would be entitled to a full-day compensation-off. Replacing the conventional on-call system, where doctors had to work for more than 24 hours at one go, with a shift system of 13 – 16 hours would mean more compensation-offs for doctors, thus further stretching the already tight workforce in the clinical departments.

724 There were respondents who proposed other practical suggestions on the continuous work hour arrangements. For instance, doctors who had completed an extended day should not be assigned off-site duties on the same night; and a full day of rest should be granted for work on a whole-day shift. Some doctors also proposed capping both the call frequency and consecutive on-site shifts in a week while others advocated designating doctors' roles on a rotation basis instead of engaging them in the mixed duties of inpatient care, outpatient consultations and surgical operations in the same shift. Moreover, while some respondents suggested developing specialty-specific guidelines on safe shift patterns, others expressed that a mandate ordained by the Specialty Coordinating Committees would help ensure a consistent call pattern in the same specialty across hospitals.

The Steering Committee's View

725 On the whole, the Steering Committee agrees that prolonged continuous work may result in an increased risk of errors which are not good for doctors' training and safe patient care. The Steering Committee recommends HA to re-organize work and rosters so that doctors who are required to stay in the hospitals are working actively and vigilantly. Since shift work is not foreign to the medical profession and is commonly practised in clinical specialties like Accident & Emergency, Anaesthesia and the Intensive Care Unit, continuity of care for clinical departments on shift work pattern can be safeguarded by a well-established handover system. Introducing the shift system is therefore a right move to address the long work hour issue, and it should go in conjunction with a structured and comprehensive multi-disciplinary handover system involving not only doctors but also other healthcare professionals.

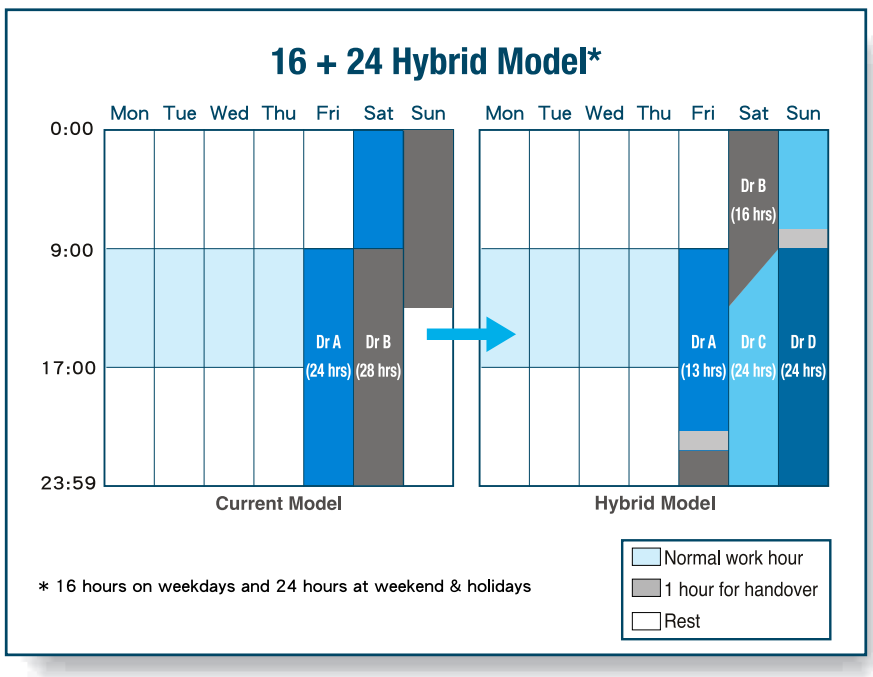
726 Having considered all the suggestions received in the frontline communication sessions and the corporate-wide consultation exercise, the current work patterns, staffing shortages and readiness of other supportive measures in the coming years, like core-competency call teams, clinical protocols and extended roles of non-medical staff, the Steering Committee believes that it is not realistic nor feasible to adopt the shift pattern of 13 – 16 hours as a short-term target. The solution will have to be locally generated.

727 The Steering Committee recommends HA to re-design the current roster system to suit service needs and maintain the work-life balance of doctors. Careful consideration should be given to the intensity of work, responsibilities expected, composition of the day / night teams, matching of skill mix to service demand and cross-disciplinary team services. The Steering Committee also recommends HA to define the most effective length of a single shift and the number of consecutive night shifts allowable for doctors. It is important not only to differentiate and adjust staffing levels between in and out-of-hours, but also to acknowledge the very different types of activities throughout the 24-hour, 7-day period.

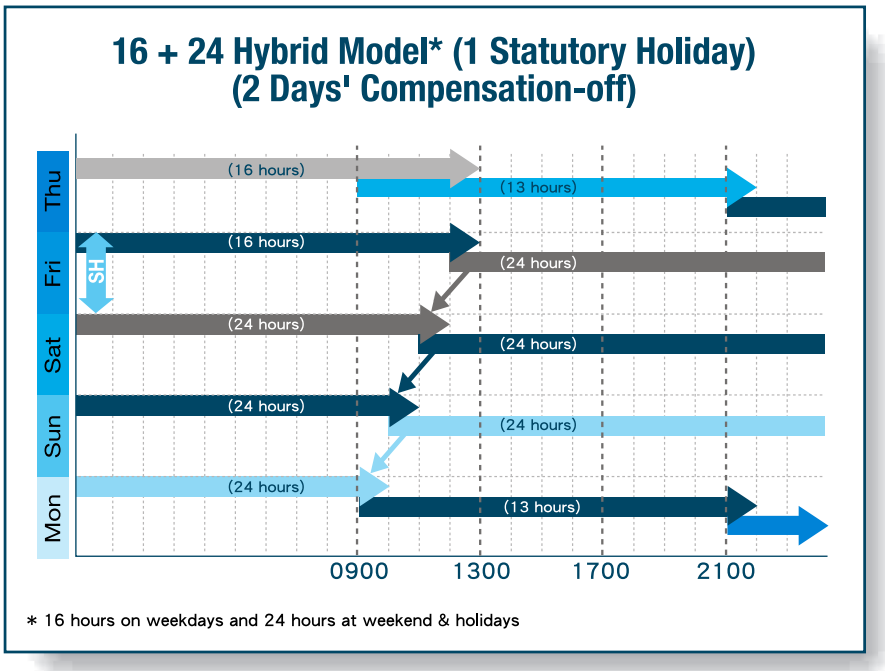
728 The Steering Committee advocates a medium-term proposal for phased replacement of the conventional overnight on-call approach with the shift system. There are a few options, viz., (a) partial shift for 13 – 16 hours, (b) full shift with mutual-cover sleep time for work exceeding 24 hours, and (c) a hybrid model of shift of 16 hours on weekdays and 24 hours at weekends and throughout public and statutory holidays. Each shift pattern has its own merits and limitations in terms of flexibility of roster arrangement, staffing deployment, patient safety as well as facilitation of professional training of doctors. HA is therefore recommended to evaluate the different shift patterns and consider the most appropriate system of work for delivering quality patient care while ensuring quality hours for doctors' service and professional training.

729 Figure 7.3 gives a general view of the hybrid model of shift for 16 hours on weekdays and 24 hours at weekends and throughout holidays, while Figure 7.4 illustrates the impact on compensation-off arrangement for doctors working on a statutory holiday under the hybrid model of shift. More examples on roster design and possible impacts of a partial shift system on doctors' work arrangements can be found in Appendix XIX.

(Fig. 7.3)



(Fig. 7.4)



730 Pending full implementation of the shift system, the Steering Committee believes that mandatory post-call half-day time-off for overnight on-site call doctors as well as mutual-cover sleep time for 4 consecutive hours (also counted as work hours) for work exceeding 24 hours will relieve doctors' long work hours to a certain extent. This will provide adequate rest for frontline doctors and enable them to make sound clinical decisions and take part in professional training while on duty, thereby improving patient care and safety.

731 Mutual-cover sleep time can usually be arranged for doctors on overnight on-site call who are expected to work for more than 24 hours, since clinical activities in most specialties drop after midnight and on-site call doctors should be able to complement one another to cope with the normal workload during the night. However, should the workload arising from urgent matters exceed the capacity of the on-site call doctors, the other doctors who are "on sleep" may be required to provide the needed support to cope with the situation.

The Steering Committee's Recommendations

732 To address the issue of prolonged continuous work hours of doctors, the Steering Committee recommends HA to adopt the following recommendations, taking into account operational concerns, patient safety considerations and prevailing difficulties that HA is currently facing in revamping the conventional overnight on-call system:

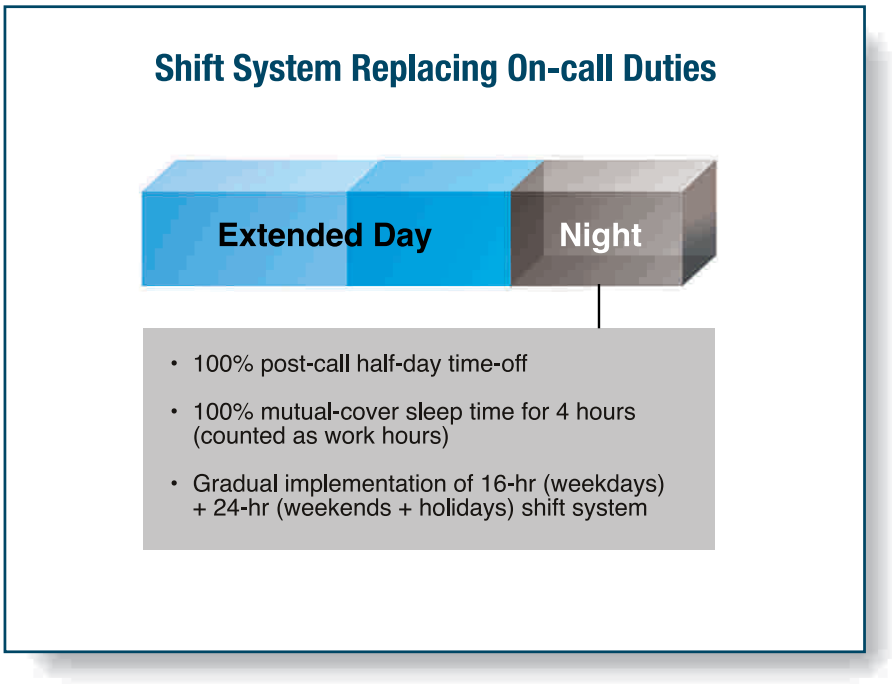
a) HA may consider gradually implementing a **shift system to replace the overnight on-call duties** in all specialties. HA is recommended to attain the ultimate target of reducing doctors' continuous work hours to **16 on weekdays and 24 at weekends and throughout public and statutory holidays.** Taking into consideration the preference of some frontline doctors for consecutive rather than intermittent night shifts in certain specialties and following their

suggestion in the Strategic Planning Workshop, the Steering Committee recommends HA to arrange no more than 5 consecutive night shifts for doctors.

b) HA may consider, in the interim, attaining 100% compliance with the granting of **post-call half-day time-off** for overnight on-site call doctors. HA may also consider providing doctors on overnight on-site call duties exceeding 24 hours with **mutual-cover sleep time for 4 consecutive hours**, which are recommended to be counted as work hours, subject to service sustainability and regular monitoring.

733 The above recommendations can be summarized in Figure 7.5 below.

(Fig. 7.5)



Strategy B3 - Structured and Comprehensive Multi-disciplinary Handover

734 While nursing handover is a formal and long established practice, there is less structured clinical handover in the medical profession. Clinical handover refers to the transfer of information and professional accountability and responsibility for some or all aspects of care for a patient or group of patients between individuals[7.1]. Effective handover is crucial to maintaining continuity of care, good clinical practice and teamwork and, above all, enhancing patient safety.

[7.1] Royal Australian College of Medical Administrators Quarterly, June 2007.1;

735 From what the Steering Committee has learnt from overseas countries, handover involving different disciplines ensures that all critically ill and unstable patients in the hospital are identified and reviewed. Early review and management of these patients can prevent subsequent deterioration and critical incidents. Patient care can thus be prioritized and anticipated and the right person will see the sickest patients first. In addition, it is easier to make cross-specialty referrals during a multi-disciplinary handover. Senior clinicians may also review policies and prescribe management plans for patients during an effective handover so that junior doctors would undergo a high-quality educational experience with adequate clinical supervision. As a result, teamwork is fostered and patients are empowered with more information and sense of involvement in their own care.

736 With the gradual introduction of a shift system replacing the conventional mode of overnight on-call approach and transfer of patients between hospitals under the treat-and-transfer initiative, handover becomes much more crucial to ensure the continuity and safety of patient care.

Consultation: Feedback from Respondents

737 Most respondents accepted that medical handover was a crucial element of quality patient care. Some appreciated the proposal for structured multi-disciplinary handover in order to ensure the continuity of patient care under the shift system. Yet, doctors in the surgical streams anticipated difficulties as they might be operating in the theatres and unable to join the handover. Besides, as patients were managed in different wards, on-site doctors had to join handover at many sites within limited time. A suggestion was received for HA to develop a standard toolkit and operational guidelines for effective handover of clinical information. On the other hand, a respondent considered that handover was more applicable to hyper-acute settings and emergency situations where the focus was more on numerical life or physiological parameters than on patient care.

The Steering Committee's View & Recommendations

738 The Steering Committee need not elaborate on the benefits of an effective handover system in patient management. On the whole, an effective handover system should be well-structured, comprehensive and multi-disciplinary. Critically ill and unstable patients, identified according to clinical judgment, should be included in the handover. During the handover, everyone should be aware of what tasks are outstanding from the previous shift and what monitoring and reviews are taking place. Moreover, specific knowledge of the sick and potentially sick patients is required. All members involved in the handover should work as a team and be conversant with what help and support they can get and from where. Work should also be prioritized according to patients' needs; and the process can be improved by incorporating clinical risk assessment and enhanced information systems.

739 According to overseas experience, a number of tools would be useful, such as a generic policy on clinical handover, standardized care protocols, minimum data sets and key performance indicators. The responsibilities of different teams for clinical care should be well defined and adequately documented while a system should be in place to facilitate reporting and escalation of clinical issues upward for timely action. The use of information technology, coupled with ample staff training and education, would also assist the effective transfer of information. However, for clinical teams and patients to truly benefit from clinical handover, strong commitment of the management, buy-in of clinicians and commitment of multi-disciplinary staff are all indispensable.

740 To maximize the benefits of a formal handover system, the Steering Committee recommends HA to adopt the following measures:

a) HA may consider identifying the competencies and training needs of all doctors and developing appropriate clinical handover policy, care protocols, data sets, etc. in their respective scope of service.

b) HA may consider putting in place a **structured and comprehensive multi-disciplinary handover system** involving doctors, nurses and related allied health professionals to provide a platform for staff on duty to engage in in-depth discussion of the management plan for critically ill and unstable patients in order to ensure patient safety and continuity of care.

741 The above recommendations can be summarized in Figure 7.6 below.

(Fig. 7.6)