4 Establishment of Emergency Medicine Wards



Integrated, fast-track and more efficient care through teamwork



EXECUTIVE BRIEF

401 Three acute public hospitals piloted the Emergency Medicine Ward ("EMW") initiative to reduce avoidable admissions, improve the quality of short-stay patient care and the efficiency in handling acute patient admissions. Since commencement of the programme, admissions to medical wards via the Accident and Emergency Departments had dropped by 4.8% - 19.7% in the pilot hospitals. A new model of patient care emerged in an acute public hospital where its newly established EMW served to buffer hospital admissions at night while patients, upon receiving initial investigation, treatment and stabilization in the EMW, would be discharged or transferred out the following day. Under this new model, the emergency medical admissions at night and the total medical admissions had been reduced by 51% and 33% respectively in the review period. Despite the confounding factors and teething problems that were encountered in the pilot phase, EMWs had improved the quality of care in terms of service timeliness and shortened hospital stay; and provided a suitable platform for multi-disciplinary and cross-specialty collaboration in managing selected acute conditions. Besides, EMWs had reduced much of the disturbance caused to the other clinical specialties by centrally managing patients suffering from psychiatric problems as well as violent and drug-overdosed patients; and were deemed to have considerable potential for tackling the rising service volume and reducing avoidable hospital admissions, hence workload of other clinical specialties.

402 HA was recommended to adopt appropriate modes of emergency care for acutely admitted patients in accordance with the local situations and the pre-existing setups of different Accident and Emergency Departments. For those acute hospitals that had already set up their EMWs, HA was recommended to continue refining the service models in order to further reduce avoidable hospital admissions, alleviate the workload of clinical specialties and improve the quality and safety of emergency care. HA was also recommended to address the critical issues of disproportionate hospital beds and system support, inadequate collaboration among the clinical specialties and the need for strengthened core competency training of EMW physicians; and expand the scope of community care in order to maximise the patient outcome and service efficiency in providing quality care for selected acute patient conditions.

PILOT WORK REFORM PROGRAMME

403 Provision of hospitalised care for a substantial and escalating number of patients had always been a pressing challenge to HA. The demand for public healthcare services had soared high in recent years, owing much to an ageing population with multiple chronic diseases, rising medical costs, ever advancing patient services delivered by HA and, more importantly, the global economic downturn and outbreak of epidemics which had significantly pushed up the reliance on and

utilization of public hospital services. To ensure the longterm sustainability while not compromising the quality and safety of its services, HA had an impending need to optimise its service volume and make better use of its resources to deliver quality yet cost-effective healthcare services for the society.



404 Overseas literature had shown that short-stay clinical units, like Emergency Medicine Wards ("EMWs"), had the potential for reducing patients' length of stay, improving the efficiency of emergency departments and enhancing the cost-effectiveness of hospital care¹¹. In order to reduce avoidable admissions, improve the quality of short-stay patient care and the efficiency in handling acute patient admissions, HA had established EMWs in three acute public hospitals, viz., Caritas Medical Centre ("CMC"), Pamela Youde Nethersole Eastern Hospital ("PYNEH") and Princess Margaret Hospital ("PMH") since May 2007. By concentrating resources to provide integrated and expedited care, EMWs were aimed at minimising avoidable hospital admissions, improving care for short-stay patients in selected acute conditions and rationalising night activities in different clinical specialties, thereby reducing both the workload and work hours of frontline doctors in public hospitals (Figure 4.1). From 2007/08 to 2009/10, HA had injected an additional sum of \$68 million in total to run the pilot EMW initiative¹².



Fig. 4.1 – Establishment of Emergency Medicine Wards

¹¹ Short-stay Units and Observation Medicine: A Systematic Review, The Medical Journal of Australia 2003, 18(11):559-563.

¹² Funding provision for the pilot EMW programme amounted to \$22.7, \$30 and \$15.4 million in 2007/08 (half-year), 2008/09 and 2009/10 respectively.

- 405 The EMW operation differed from the conventional mode of observational medicine delivered by the Accident and Emergency Department, in that EMWs took on a treat-and-review approach and served as a hub of multi-disciplinary and community care for patients. Fast-track diagnostic work-up and protocol-driven care were given while regular joint consultations between Emergency Physicians and other clinical specialists were delivered to ensure timely and appropriate patient management. EMW service was targeted at selected acute clinical conditions that would benefit from short-stay care, preferably within 48 hours, like dizziness, abdominal or chest pain, fever, gastroenteritis, asthma, low back pain, drug overdose, onset of psychiatric symptoms and other bone fracture cases that did not require immediate operation. EMWs would thus optimise inpatient activities at night when the manpower and facility support in the hospital was relatively slim, and provide a good buffer for other clinical specialties during out-of-hours.
- 406 The EMW initiative was not new to HA and its values in reducing avoidable admissions and improving short-stay care were proven in other local public hospitals since 2002¹³. EMWs were thus established in phases in Alice Ho Miu Ling Nethersole Hospital, Pok Oi Hospital, Prince of Wales Hospital, Queen Elizabeth Hospital, Ruttonjee Hospital, Tuen Mun Hospital and Yan Chai Hospital at various times in 2007 and 2008 under different sources of funding. Table 4.1 below illustrated the set-up of EMWs in the three acute pilot hospitals (i.e. CMC, PMH and PYNEH), which were essentially out of conversion of their acute medical wards or renovating the existing observation ward in the Accident and Emergency Department with a bed provision ratio of around 9% 10% of their daily emergency attendances.

	СМС	РМН	PYNEH
EMW Commencement Date	November 2007		May 2007
Ward Source	Acute Medical Ward		Observation Ward
No. of EMW Beds (% of Daily Emergency Attendances)	32 + 2 Isolation Beds 32 (8.9%) (8.8%)		20 → 40 (Dec 2008) (4.9% → 9.8%)
No. of Observation Beds (Pre-pilot \rightarrow Current)	10→10	22 → 14	28 → 2

Table 4.1 – Set-up of EMWs in Pilot Hospitals

¹³ Queen Elizabeth Hospital started the emergency medicine practice in 2002 and an EMW was formally set up in January 2007. Acute admissions to all clinical specialties via its Accident and Emergency Department were steadily reduced from 22.7% in 2002 to 19.4% in 2007/08.

PILOT OUTCOME AND OBSERVATIONS

407 In order to assess the effectiveness of the pilot EMW programme, share the best practice of operation and strategise for further rollout of the initiative, an EMW Task Group was formed under the Steering Committee with representatives from the nine acute hospitals that had established their EMWs. Evaluation was made against two parameters, viz., reduction in acute admissions to clinical specialties and the quality of care tendered to acutely admitted patients. Performance data from January 2008 to June 2009 were compared to those from January 2006 to June 2007 in both the pilot and non-pilot hospitals; and patients' feedback were collated on the EMW services.

A. Reduction in Avoidable Acute Admissions to Clinical Specialties

408 Table 4.2 showed the quantified impacts of EMW services in reducing avoidable acute admissions in the pilot hospitals in the review period. Upon establishment of the EMWEs, the Internal Medicine, Surgery and Orthopaedics specialties saw a salient drop in their acute admission rates by up to 19.67%, 7.26% and 5.18% respectively in the pilot hospitals, while acute admissions to both Internal Medicine and Surgery had actually risen by 12.02% and 1.46% respectively in the non-acute hospitals. On the whole, a portion of the short-stay cases had been redistributed to the EMWs whereas the more complex clinical problems were left to the acute specialty wards for management. The right care would thus be delivered to the right patients at the right place and the public healthcare resources could be utilised more efficiently. However, in order to maximise the effectiveness of EMW service in delivering quality and integrated care for patients, greater support from other clinical specialties would be required in the pilot hospitals.

	СМС	РМН	PYNEH	Non-EMW Hospitals*
Internal Medicine	- 19.67%	- 12.49%	- 4.80%	12.02%
Surgery	- 5.62%	0.53%	- 7.26%	1.46%
Orthopaedics	- 0.91%	- 3.15%	- 5.18%	- 0.75%

Table 4.2 – Impacts of EMW on Reducing Avoidable Acute Admissions
(Jan 2008 – Jun 2009 vs Jan 2006 – Jun 2007)

* Non-EMW hospitals included Kwong Wah, Queen Mary and United Christian Hospitals.

- 409 The varied outcomes among the clinical specialties and hospitals were also attributable to the pre-existing set-up of EMWs, adequacy of hospital beds as well as competence of the medical team correlated with staff training in acute care management. In particular, the reduction of inpatient capacity due to conversion of the acute medical wards had necessitated closer collaboration between the Medical and Emergency Physicians in order to manage the rising service volume in both CMC and PMH; whereas in PYNEH, the EMW established through renovating the existing observation beds could better balance the needs of different specialties in delivering fast-track and short-stay care. Yet, its limited bed provision, estimated at 4.9% of the daily emergency attendances at the start of its operation, had gravely confounded the impacts of EMW on reducing hospital admissions to different clinical specialties.
- 410 Moreover, the patient surge during the prolonged cold spell and flu season in the first quarter of 2008 as well as the outbreak of human swine influenza (H1N1) in the second quarter of 2009 had driven medical admissions to new heights in all public hospitals. Despite the much lessened impacts due to the significant patient surge, EMWs had managed a great portion of the short-stay patients, thereby alleviating the workload of medical specialty in these trying periods. It also explained the remarkable difference between the pilot and non-pilot hospitals in reducing their acute medical admission rates after establishment of the EMWs. On the whole, EMWs were deemed to have considerable potential for tackling the rising service volume and reducing hospital admissions, hence workload in other clinical specialties.

B. Quality of Care for Acutely Admitted Patients

- 411 Despite the varied outcomes of EMWs at different pilot sites which were confounded by the pre-existing set-up of the Accident and Emergency Department and the outbreak of epidemics in the past two years, the integrated care and fast-track services provided by EMWs were in general applauded in the pilot hospitals. Service timeliness was improved and the length of hospital stay was shortened without any rise in patients' unplanned re-admission rate. Operational risks were also better managed through improved documentation. EMWs was considered a suitable platform for multi-disciplinary and cross-specialty collaboration to manage selected acute conditions; and would enhance patient safety by pooling medical staff to manage acute patients according to established clinical management protocols and action pathways. Besides, with the support of psychiatric nurses, EMWs had reduced much of the disturbance caused to the other clinical specialties by centrally managing patients suffering from psychiatric problems as well as violent and drug overdosed patients.
- 412 It was worthwhile to note that, in a survey conducted in September to November 2008 with 300 patients discharged from the EMWs of the pilot hospitals, 91% of the respondents agreed that the EMW service would improve the quality of care in terms of service timeliness and shortened hospital stay. The majority of respondents were satisfied with the EMW service and preferred their stay in EMW to observation wards. These results were in line with the objectives of establishing EMWs to provide integrated care for patients in selected acute clinical conditions through earlier senior doctor involvement, protocol-driven care, more proactive and expedited patient management and shortened length of hospital stay.

EMW – ANOTHER MODEL OF CARE

413 The Steering Committee was pleased to note that HA kept on revisiting and refining the mode of delivering emergency care for acute patients. In Alice Ho Miu Ling Nethersole Hospital ("AHNH"), for example, a new EMW was established in December 2008 with an initial provision of 20 beds only (i.e. around 6% of its average daily emergency attendances). Instead of providing round-the-clock service, the EMW in AHNH operated as an "owl ward", which opened and admitted all medical cases¹⁴ from 9 pm to 9 am the next morning. Ward rounds were done

¹⁴ Except air borne precaution, renal failure patients on CAPD and patients in critical conditions.

by a senior Emergency Physician and all EMW cases would be discharged home, transferred to the medical ward or another buffer hospital in the same cluster for further management. In a six-month review after establishment of the EMW, the night emergency medical admissions had dropped by 51% whereas the total emergency medical admissions had also been reduced by 33%. The bed alert in the medical specialty, triggered when there were more than 15 patients waiting for hospital beds or when more than 5 patients had waited for more than 8 hours, has significantly dropped from 29 cases in January - June 2008 to only 2 cases in the same period in 2009. The workload of doctors and nurses in the Medical Specialty at night was thus relieved, thereby giving ways for reducing the number of overnight on-site on-call doctors in the specialty. The EMW service in AHNH was a new care model where the night operating mode, alongside senior specialist screening, multi-disciplinary collaboration and ample community support, had reduced acute admissions to clinical specialties; and it also served as a valuable buffer on long holidays and for disease outbreak. The frontline doctor representatives also commended highly the contribution of EMW to reducing clinical specialties' workload in managing selected acute conditions.

SUCCESS FACTORS OF EMW SERVICE

- 414 Having reviewed the outcomes at different pilot sites and making reference to overseas literature, the Steering Committee identified the following system factors which were essential to the success of the EMW initiative:
 - a) provision of hospital beds at 8% 10% of the daily emergency attendances in order to support and maximise the function of these short-stay units – Yet, the optimal number depended on the case mix of patients, experience of the physicians and extent of cross-specialty collaboration.
 - b) competent workforce with adequate senior coverage for admission screening and supervision – This could be improved through rotational and enhanced core competency training which should be focused on acute care management and teamwork.
 - c) closer cross-specialty collaboration in terms of joint consultation / reviews and clinical rotations across specialties for Emergency Physicians – This would render more effective management and expedited recovery of EMW patients, hence reduced admissions and workload for other clinical specialties.
 - d) gradual buy-in and acceptance among the frontline health carers This would facilitate cross-specialty collaboration in delivering quality care and expediting patient management.
- 415 Nonetheless, the following operational arrangements were equally important to enhance the effectiveness of EMWs in the pilot hospitals:
 - a) fast-track system support and integrated care, like diagnostic investigations, endoscopy and imaging support, allied health care, specialist outpatient referrals and community care.
 - b) protocol-driven and evidence-based care to ensure safe delivery of EMW service.
 - c) strengthened risk management in infection control, handling of work place violence, fall prevention for elderly patients, etc. to smooth out the operation in EMW which was characterised by high patient turnover and cohort management of patients with psychiatric symptoms.

ISSUES OF CONCERN

- 416 Since commencement of the pilot programme, certain frontline clinicians were concerned about the EMWs' gate-keeper function and their effectiveness in reducing the workload of other clinical specialties. As certain EMWs were converted from acute medical wards, they were taken to manage medical patients only in order to compensate for the reduced capacity in the medical specialties. The EMW initiative was thus regarded as a relabeling of the medical wards and EMW Physicians were deemed to have inadequate expertise in managing complicated clinical conditions. Besides, avoidable admissions could be reduced through tightened admission screening at the Accident and Emergency Departments instead of injecting extra resources to develop EMWs. Suggestions were thus received to redirect resources to the medical and other clinical specialties, which had thus far rendered lukewarm support to the pilot EMW programme. The frontline doctor representatives were also concerned about the variable outcomes of admission reductions in different hospitals piloting the EMW initiative. Finally, the HKAM was concerned about the impacts of EMW on doctors' training; and there might be a chance to modify the training programme for Emergency Medicine in order to ensure that new fellows had adequate know-how in managing emergency patients.
- 417 The Steering Committee was cognizant of the clinicians' concerns over the functions of EMWs. As discussed above, the value of EMWs lay not only on reducing avoidable admissions and workload of other specialties, but also on improving the overall efficiency in patient management by providing integrated and fast-track care to reduce patients' length of stay in the hospital. While EMWs would handle selected acute conditions, the other clinical specialties would concentrate on managing the more complicated patient problems. Besides, patients with disturbing behaviour and psychiatric problems were centrally managed in the EMWs, thereby reducing the disturbance caused to both staff and patients in other specialties. Patients' needs were thus matched with the place and expertise of care; and EMWs would render more efficient patient management, as evidenced in the successful models of care taken in CMC and AHNH.
- 418 On the other hand, the Steering Committee agreed that scrutinised admission screening and enhanced doctors' training could strengthen the gate-keeper function of the Accident and Emergency Departments. It was encouraging to note that HA already had plans to arrange clinical rotations of EMW Physicians among various acute hospitals in order to enhance their competency in managing different disease groups and share the best practices among the EMW hospitals.

- 419 The Steering Committee noted that, upon conversion of the acute medical wards into EMWs in CMC and PMH, the medical manpower in Internal Medicine was largely maintained. The doctor-to-patient ratio was improved, with lesser workload for each physician on average. Coupled with other pilot work reform strategies like care technician services and enhanced senior nurse coverage during out-ofhours (which would be elaborated in the ensuing chapters), the EMW initiative had enabled the Medical physicians to work less intensely and be more focused on core clinical decisions in patient management. Greater flexibility was also allowed to change their operational practice and overnight on-site on-call system, thereby reducing their work hours.
- 420 Despite the current limited impacts of EMWs on the surgical stream specialties, the Steering Committee believed that, given adequate hardware (i.e. hospital beds, manpower and facilities), software support (i.e. clinical management protocols and guidelines, staff training, collaboration with other specialties) as well as cultural change and staff acceptance of the new mode of EMW service, there would be room for improving the programme effectiveness in reducing avoidable admissions and the workload of other specialties for the benefits of both the health carers and patients. Moreover, as expressed by some hospital management staff, HA might consider benchmarking and promulgating effective EMW practices among the HA hospitals and conducting audits as to align variations in he EMW practices.
- 421 Finally, while the pilot programme had produced variable results, there was undoubtedly much to be gained by patient streaming, which was pivotal on reducing patients' length of stay that in turn was an important measure of hospital efficiency. Different models of patient streaming could be tailored to individual hospitals but a feature, in particular from the United States, was how enhanced community care could be used to substantially reduce hospital length of stay. There was much evidence showing that treating patients in their own homes was not only more cost-efficient but also more convenient, safer and more effective¹⁵. HA should thus consider expanding its scope of community care in order to reduce patients' length of stay and manage the rising workloads in public hospitals.

¹⁵ Information provided by Mr Andrew FOSTER, overseas expert of Steering Committee on Doctor Work Hour.

THE STEERING COMMITTEE'S RECOMMENDATIONS

- 422 The Steering Committee put forward the following recommendations in relation to the establishment of EMWs in HA hospitals:
 - a) HA was recommended to adopt appropriate modes of emergency care for acutely admitted patients in accordance with the local situations and the preexisting set-ups of different Accident and Emergency Departments. For those acute hospitals that had already set up their EMWs, HA was recommended to continue refining the service models in order to augment their impacts on reducing avoidable hospital admissions, alleviating the workload of clinical specialties and improving the quality and safety of emergency care.
 - b) HA was recommended to address the critical issues of disproportionate hospital beds and system support, inadequate collaboration among the clinical specialties and the need for strengthened core competency training of EMW physicians in order to maximise the service outcome and synergise for greater success in providing quality emergency care for selected acute patient conditions.
 - c) HA was recommended to expand the scope of community care in order to reduce avoidable admissions and enhance the service efficiency of public hospitals.