Editorial

Universiti Malaysia Sabah Master of Emergency Medicine Program: Bridging Gaps in East Malaysia

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Abstract

Emergency medicine (EM) plays a critical role in managing acute illness, trauma, and life-threatening conditions worldwide. In Malaysia, structured postgraduate EM training has progressed steadily over the past two decades. However, significant disparities remain between Peninsular Malaysia and East Malaysia. Sabah, with its challenging geography, dispersed population, and recurrent natural disasters. To address these challenges, Universiti Malaysia Sabah established the Master of Emergency Medicine program, the first of its kind in East Malaysia. The program was developed through phased stakeholder engagement, rigorous national benchmarking, and strategic external collaboration with the Sabah State Health Department, Ministry of Health, Sabah Parks, the Royal Malaysian Navy, and academic collaborators. Niche modules in wilderness medicine, rural and remote medicine, disaster medicine, and aero-retrieval are incorporated to meet Sabah's unique healthcare needs. The program received partial accreditation in 2025 and is scheduled to commence in 2026. The UMS aims to position this initiative as a regional training hub under the Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area, fostering international cooperation and enhancing health system resilience across Southeast Asia.

Keywords: *emergency medicine, curriculum, wilderness medicine, disaster medicine, international collaboration*

INTRODUCTION

Emergency medicine (EM) is a vital speciality worldwide that provides frontline care for acute illness, trauma, and critical conditions. Globally, postgraduate EM training has been central to strengthening healthcare systems by producing specialists capable of delivering timely, life-saving interventions. In Malaysia, structured postgraduate EM training has grown significantly over the past two decades, with four universities currently offering Master of Emergency Medicine (MEM) programs: Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), Universiti Malaya (UM), and Universiti Teknologi MARA (UiTM).[1] However, significant disparities remain between Peninsular Malaysia and East Malaysia, particularly Sabah and Sarawak.[2]

Sabah, with its vast geography, dispersed population, and complex healthcare needs, represents one of the most significant challenges in Malaysian healthcare delivery. The state faces unique burdens: long transport times to tertiary centers, a high incidence of trauma from road traffic accidents, recurrent exposure to natural disasters, and the provision of critical care in remote settings.[3-6] Geographic barriers, together with limited specialist distribution, further exacerbate inequities in access to emergency care.[7] Retaining emergency physicians in Sabah remains an ongoing struggle, with many relocating to Peninsular Malaysia or abroad in search of academic and career opportunities.[8]

As of 2024, Sabah has 24 public hospitals with dedicated emergency departments (EDs), including

tertiary and secondary centres such as the Queen Elizabeth Hospital (HQE), the Queen Elizabeth Hospital II (QEH II), and the Sabah Women and Children's Hospital (HWKKS).[9] These major referral centres are staffed by an adequate number of emergency physicians, including a substantial proportion of fully trained specialists and consultant-level practitioners. Collectively, this specialist presence provides a viable supervisory and clinical training environment, reducing the historical dependence on Peninsular Malaysia for advanced emergency medicine training. Importantly, these hospitals already host rotating EM trainees and junior specialists, indicating that the service volume, case mix, and supervisory capacity required for postgraduate training are already established within Sabah.

Rather than viewing geographical challenges as barriers, Universiti Malaysia Sabah (UMS) sees Sabah's context as a strategic imperative for decentralising postgraduate medical training and building a sustainable, locally anchored emergency medicine workforce for East Malaysia. Established in 1994, UMS is one of only two public universities in the region.[10] Recognising the urgent need to strengthen local emergency medicine capacity, the university initiated the development of an MEM program, which was the first of its kind in East Malaysia. A convergence of several factors underpins this initiative: (i) the presence of experienced emergency physicians with national service and leadership roles, (ii) the establishment of collaborative mechanisms with the Ministry of Health (MOH) for accredited clinical placements, and (iii) a consistent pipeline of locally trained medical graduates who would otherwise need to relocate to Peninsular Malaysia for specialist training.

This paper describes UMS's journey in developing the MEM program. It outlines the development process, the challenges faced, the innovations and solutions implemented, the early outcomes, and the lessons learned. By sharing this experience, we hope to provide valuable insights to other institutions planning postgraduate medical training in resource-limited or geographically unique settings.

DEVELOPMENT PROCESS AT UMS

The program's development followed a structured, multiphase approach that began with a comprehensive needs assessment. To quantify regional workforce requirements, data on the number and distribution of emergency physicians nationwide were obtained from the National Head of Emergency Medicine Service. This process was complemented by extensive stakeholder engagement, including formal meetings and consultations with the Board of Study (BOS) and the Speciality Conjoined Committee in Emergency Medicine (SCCEM). These deliberations highlighted the urgency of addressing persistent shortages of specialists in East Malaysia, where workforce distribution remains highly uneven.[10] Historically, most Sabah-based medical officers pursuing specialist training in emergency medicine have been required to relocate to Peninsular Malaysia for at least 4 years, resulting in personal, financial, and service disruptions. Throughout this process, oversight from the BOS and SCCEM ensured alignment between national professional standards and local service requirements. The BOS comprises key national stakeholders, including the National Head of Emergency Medicine Service, the Sabah State Head of Emergency Medicine Service, the President of the College of Emergency Physicians Malaysia, and the SCCEM Chairperson.

The curriculum was benchmarked against the Emergency Medicine Postgraduate Training in Malaysia, Training Curriculum, Version 1, 2021, which aligns with national standards while incorporating Sabah's unique needs.[11] Guidance and technical input were obtained from established universities with EM programs, which provided essential expertise and shared frameworks.

The initiative commenced in 2022 with the formation of a curriculum development committee within the Department of Emergency Medicine, Faculty of Medicine and Health Sciences, UMS. This initial step evolved into a broader collaborative effort involving national leaders, policymakers, and academic partners. The approval process progresses through multiple internal and external stages. Internally, the proposal was reviewed by the Faculty Board, Senate, and Board of Directors. Externally, it was evaluated by the SCCEM and the *Jawatankuasa Bersama Ijazah Lanjutan Perubatan* (JBILP), confirming compliance with regulatory requirements.

Picture 1: The Master of Emergency Medicine UMS curriculum committee, consisting primarily of members from the Emergency Medicine Department,

during the final curriculum workshop in February 2024.

The process progressed to an accreditation visit by the Malaysian Medical Council (MMC) and the Malaysian Qualifications Agency (MQA) in October 2024. This rigorous and incremental pathway provided flexibility and credibility, establishing a foundation for a program that meets national benchmarks while addressing Sabah's distinctive healthcare challenges.

Picture 2: The Malaysian Medical Council and Malaysian Qualification Agency accreditation visit to UMS on 7-8th October 2024.

CHALLENGES FACED

Substantial constraints characterised the program's early development, primarily related to the workforce and infrastructure. In 2022, the Department of Emergency Medicine comprised four lecturers, indicating the need to expand academic capacity. Although the team has grown to eight emergency physicians, including two consultants and three trainee lecturers, staffing remains lean compared with established centres. A structured pipeline was established to recruit and train additional trainee lecturers within the program, thereby enhancing future faculty capacity and supporting ongoing supervision and teaching.

A second constraint was the absence of a dedicated university hospital, which was scheduled to open in 2026.[12] Prior to the commencement of Hospital Pakar UMS (HPUMS) operations, establishing a stable clinical training base was challenging. Consequently, interim placements in accredited MOH hospitals are implemented to ensure an adequate case mix and continuity of clinical rotations. The lack of an on-campus teaching hospital complicated scheduling and the breadth of exposure required for robust postgraduate training, particularly for high-acuity and time-critical presentations.

A further challenge was limited in-house expertise in medical education. During curriculum design, the UMS lacked dedicated medical educationists to guide pedagogy, documentation, and accreditation. As national expectations increasingly emphasise alignment with outcome-based education (OBE), this gap has complicated the mapping of outcomes, assessments, and evidentiary requirements. Mitigation strategies included engaging external academic advisors from established EM programs (*see Innovations and Solutions*) and allocating departmental resources to integrate OBE principles systematically. If HPUMS commissioning is delayed, the interim MOH training-based arrangement will continue to ensure service-appropriate exposure and supervision.

INNOVATIONS AND SOLUTIONS

To address the absence of a university hospital, UMS signed a Memorandum of Agreement (MOA) with the MOH, enabling program trainees to undertake rotations at accredited MOH hospitals across Malaysia, particularly in Kota Kinabalu. The key hospitals identified for training include the QEH, QEH II, and HWKKS. These established postgraduate centres provide a stable case mix, supervision, and exposure appropriate for specialist training.

Similarly, UMS has been established as an accredited American Heart Association (AHA) training site under the Universiti Kebangsaan Malaysia AHA International Training Centre, strengthening the local ecosystem for advanced life-support education and regular recertification.

To mitigate the limited in-house medical education expertise, UMS appointed an external academic advisor from the Emergency Medicine Department, USM, and consulted medical educationists from UKM and USM. Their guidance supported curriculum design, pedagogy, documentation, and alignment with accreditation standards, ensuring compliance with outcome-based education principles.

The curriculum introduces modules tailored to Sabah's context, such as wilderness and remote medicine, disaster medicine, and hyperbaric medicine, which are delivered through attachments at Sabah Parks (e.g., Kinabalu Park), the UMS Natural Disaster Research Centre (NDRC), the Hyperbaric Unit at Hospital Angkatan Tentera (HAT), the Royal Malaysian Navy (TLDM), and Sepanggar. The UMS has signed an MOU with Sabah Parks and is finalising another with the HAT TLDM Sepanggar facility.

A defining strength of the program is its comprehensive, programmatic assessment. In line with the Emergency Medicine Postgraduate Training in Malaysia, Training Curriculum Version 1, 2021, the program combines continuous workplace-based

assessments such as Mini-Clinical Evaluation Exercise (Mini-CEX), Intervention-Based Assessment (IBA), Case-Based Discussion (CBD), and the Floor Management Assessment Tool (FMAT), with summative checkpoints to evaluate clinical knowledge, procedural skills, decision-making, leadership, and professional behaviour across settings.[11] Collectively, these measures address training-based and educationist constraints, and faculty expansion remains ongoing and actively managed.

EARLY OUTCOMES AND IMPACT

Despite being in the pre-implementation phase, several early indicators of program readiness and stakeholder support are evident. The UMS has secured an MOA with the MOH, enabling postgraduate training placements at accredited MOH facilities across Malaysia, with a primary emphasis on hospitals in Sabah. In addition, preliminary market surveys have shown strong support among emergency physicians and trainees for the UMS MEM program and its curriculum, with more than 20 emergency physicians endorsing both. In contrast, surveys of potential candidates, particularly medical officers practising in Sabah, revealed universal willingness to enrol if the programme was offered.

In April 2025, the program received partial accreditation from the Malaysian Qualifications Agency (MQA) and the Malaysian Medical Council (MMC), signifying regulatory confidence in its curriculum design, governance structure, and training framework. This milestone confirmed the program's readiness to progress from planning to implementation.

The inaugural intake is scheduled for June 2026. Initial program targets include enrolling the first cohort of trainees, operationalising accredited training rotations within MOH hospitals in Sabah, and establishing structured supervision and assessment processes in line with the National Postgraduate Medical Curriculum. Collectively, these early developments position the program to improve access to specialist training and long-term workforce retention in East Malaysia.[8]

Program monitoring and evaluation will extend beyond trainee intake numbers to include a broader set of educational and workforce indicators. Key performance measures will include trainee progression and completion rates, graduate retention in Sabah and East Malaysia, faculty growth and stability, and performance in workplace-based and summative assessments. Where feasible, service-level indicators—such as supervision capacity and training site readiness—will be monitored to assess the alignment between educational outputs and regional health system needs.

LESSONS LEARNED

Collaborative development was essential. Beginning with four lecturers, the program advanced by sequencing governance and curriculum design, showing that project management can overcome structural constraints. Alignment to national standards, coupled with contextualisation to Sabah's service needs, enhanced credibility and relevance. An emphasis on human capital growth recruiting trainee lecturers toward faculty roles has created a sustainable supervision pipeline. The UMS now has eight emergency physicians, including two consultants and three trainee lecturers, with further recruitment planned.

Several risks were identified during program planning, necessitating proactive mitigation strategies. Delays in HPUMS commissioning may affect access to a dedicated training base. To address this, contingency arrangements with accredited MOH hospitals have been formalised to ensure continuity of clinical exposure and supervision. Similarly, challenges in faculty recruitment remain a recognised risk in geographically remote settings. This is mitigated through a phased recruitment strategy, the development of trainee-lecturer pipelines, and national academic collaborations to support supervision during the early implementation phase.

Targeted partnerships and proactive risk management are important. Interim clinical placements in accredited MOH hospitals provided a stable training base until the university hospital commission was established. In contrast, external academic advisors helped bridge gaps in OBE and accreditation. These experiences highlight transferable principles: establish governance early, build capacity in parallel, leverage external expertise for quality assurance and evaluation, and maintain contingencies for infrastructure-dependent milestones. Together, these strategies enabled steady progress from a 2022 departmental initiative to a nationally recognised program with broad stakeholder support.

FUTURE DIRECTIONS

Looking ahead, the UMS MEM program's future development will be guided by both local service priorities and established regional models of decentralised postgraduate training. At the institutional level, UMS will expand faculty capacity, deepen regional collaboration, and strengthen

research capability in niche areas such as wilderness and disaster medicine. Planned targets include recruiting more than five additional faculty members and formalising multiple academic and service collaborations through an MOU.

Faculty development will be supported through structured mentorship, protected academic time, and progressive capacity-building pathways. Junior faculty members and trainee lecturers will be paired with senior emergency physicians, both locally and through national academic networks, to support clinical supervision, educational scholarship, and leadership development. As faculty numbers expand, UMS aims to formalise protected time for teaching, assessment, and research activities in alignment with institutional workload policies. Funding mechanisms, including university allocations, competitive research grants, and collaborative training initiatives with the MOH, will be leveraged to support faculty development and academic sustainability.

The commissioning of HPUMS in 2026 is expected to provide a dedicated clinical training base and support specialised postings in wilderness, disaster, and remote medicine. In collaboration with Sabah Parks, the HAT TLDM Sepanggar facility, and the NDRC UMS, this training pathway will enable sustained high-fidelity clinical exposure and structured supervision. Contingency arrangements through accredited MOH hospitals will remain in place to ensure continuity of training should commissioning timelines be adjusted.

Regionally, decentralised emergency medicine training models have been successfully implemented in countries such as Indonesia and the Philippines, where geographically dispersed populations necessitated locally anchored specialist education. These programs demonstrate that context-specific postgraduate training can enhance workforce retention while maintaining national accreditation standards. Building on these precedents, the UMS MEM program is positioned to extend these principles within the Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) framework.[13] Through this platform, UMS aims to foster cross-border collaboration in emergency medicine training, including joint educational initiatives, faculty exchange, and the co-development of modules with shared assessment standards.

In parallel, UMS plans to establish fellowships and special interest group (SIG) programs to consolidate advanced clinical training, mentorship, and scholarly activity. Program progress and impact will be monitored using defined indicators, including faculty growth, cross-border trainee participation, research outputs, graduate tracking, and evaluation metrics such as workplace-based assessment completion and summative performance. Collectively, these initiatives aim to support the development of a durable regional training hub in Southeast Asia, thereby strengthening health system resilience and capacity across borders.

Diversified funding streams will support the program's long-term sustainability. Core funding will be anchored within university allocations for postgraduate training, complemented by MOH-supported clinical training arrangements. Additional support is anticipated through tuition fees, competitive research funding, and collaborative educational initiatives with national and regional partners. This multi-source financing approach is intended to ensure program continuity, faculty development, and incremental expansion without reliance on a single funding source.

CONCLUSION

The development of the MEM program at UMS demonstrates how a regional university can overcome systemic constraints through innovation, collaboration, and contextual adaptation. By integrating niche strengths into the curriculum, including wilderness medicine, rural and remote medicine, disaster medicine, and aero-retrieval, UMS has built a program that addresses Sabah's service needs while contributing to Malaysia's broader medical education landscape. With a structured assessment framework, distinctive clinical postings, and deliberate attention to sustainability, the program offers a pragmatic model for institutions operating in resource-constrained settings.

The program's trajectory is anchored in regional collaboration and international partnerships. Alignment with the BIMP-EAGA positions UMS to develop a Southeast Asian training hub that advances education and strengthens health system resilience across borders. The experience yields a transferable lesson in which transparent governance, phased capacity building, and context-specific design enable modest beginnings to generate durable, system-level impact. The principal conclusion is that a locally tailored postgraduate pathway, reinforced by strategic partnerships and programmatic assessment, can expand specialist capacity while fostering regional cooperation.

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