

Acute medicine at the hospital front door: A Singapore health system priority

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ABSTRACT

Hospital crowding in Singapore is often experienced at the emergency department front door, but for many older and medically complex adults, it may signal vulnerabilities across the early acute care pathway. Delayed senior decision-making, fragmented handover between emergency and inpatient teams, limited alternatives to admission, and weak transitions back to community care create risks to safety, patient experience, and bed capacity. Acute medicine offers a practical way to redesign this interval by concentrating diagnostic breadth, senior review, rapid diagnostics, multidisciplinary assessment, and disposition planning during the first 48–72 hours of undifferentiated acute medical illness. This commentary argues that the policy value of acute medicine in Singapore lies not in replicating a UK specialty model but in defining how its core functions can complement existing medical and emergency care pathways. It examines progress in Singapore, distinguishes acute medicine from adjacent models of care, and identifies the workforce, governance, and measurement requirements for further development.

Keywords: care integration, emergency medicine, health services, internal medicine, patient flow

INTRODUCTION

Hospital crowding is a visible and recurrent pressure in Singapore's public hospitals. Although most apparent as emergency department congestion, it also reflects how patients move through the wider acute care system. For medically complex adults, the period after emergency assessment requires timely decisions about diagnosis, treatment, admission, specialty referral, and safe discharge. Delays or fragmentation during this interval can prolong hospital stay, increase pressure on inpatient capacity, and complicate transitions to ambulatory or community care. In an ageing population with rising multimorbidity, how this early phase of acute medical care is organised is therefore increasingly important.^{1,2}

Acute medicine provides 1 practical model for addressing this high-risk interval. Developed in the

UK, it focuses on adults with undifferentiated acute medical illness during the first 48–72 hours after presentation. Acute medical units (AMUs) bring together senior clinical review, rapid diagnostics, multidisciplinary assessment, treatment initiation, and explicit disposition planning. In the UK, these functions have developed within acute internal medicine as a recognised physician specialty with dedicated post-graduate training. Singapore has instead developed front-door acute medical care through existing disciplines and institution-specific service models. The relevant question is therefore not whether Singapore should reproduce the UK specialty structure but how these functions should complement existing medical and emergency care pathways.^{3–5}

This distinction matters in Singapore because acute medicine can otherwise be misunderstood as duplicating existing services. Specialist medicine provides organ- or disease-specific expertise once diagnostic and therapeutic trajectories are clearer. Hospitalist care, as developed in several health systems, emphasises continuity and coordination across the inpatient episode. General internal medicine contributes breadth across complex multimorbidity. Acute medicine has a more specific front-door role: early assessment, risk stratification, and disposition of adults presenting with acute, undifferentiated medical illness. Its purpose is to manage initial diagnostic uncertainty, avoid downstream admission where this can be done safely, identify the appropriate specialty or general medical pathway when admission is required, and connect suitable patients to ambulatory or community follow-up (Table 1).^{6,7}

The policy value of AMUs is therefore functional rather than territorial. A dedicated unit can facilitate rapid assessment, but physical ward space alone does not define the model. Its core functions include senior clinical review, timely investigation and treatment, multidisciplinary assessment, explicit disposition decisions, and safe transition to the next setting of care. In some systems, a substantial proportion of acute medical episodes can be completed within

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Table 1. Acute medicine and adjacent models of care.

Feature	Acute medicine/AMU	General internal medicine	Specialist medicine	Hospitalist care
Primary role	Rapid senior assessment, risk stratification, treatment initiation, and disposition planning	Broad inpatient and outpatient management of complex adult medical illness, including multimorbidity	Organ- or disease-specific diagnosis and management	Continuity and coordination across the inpatient episode
Typical patient population	Acutely ill, undifferentiated adult medical patients	Adults with complex general medical problems, including multimorbidity and chronic disease	Patients with defined organ-system, disease-specific, or procedural needs	Hospitalised patients requiring inpatient coordination across the admission episode
Time horizon	First 48–72 hours after acute presentation	Variable; may include acute inpatient, outpatient, and longer-term general medical care	Variable; guided by disease trajectory, procedure, or specialty pathway	Whole inpatient stay; may include acute admission care depending on local model
Usual setting	AMU, short-stay assessment area, ambulatory emergency care, or linked front-door pathway	General medical wards, outpatient clinics, and inpatient consultation services	Specialty wards, specialty clinics, tertiary centres, and procedure-based services	Inpatient wards, usually across the duration of admission
Multidisciplinary approach	High if designed with embedded nursing, pharmacy, allied health, care coordination, and rapid diagnostic access	Moderate to high, depending on ward model and local staffing	Variable; often multidisciplinary but usually organised around disease- or organ-specific pathways	Moderate to high; often team-based inpatient care with coordination across specialties
Disposition pathway	Direct discharge, ambulatory follow-up, transfer to specialist ward, general medical admission, or community-supported care	Inpatient continuation, outpatient follow-up, primary care follow-up, or specialty referral	Specialist follow-up, procedure, disease-specific pathway, or transfer back to general care	Discharge planning to primary care, specialist follow-up, rehabilitation, or community services
Cost and flow contribution	Potentially high if early senior review, diagnostics, disposition, and alternatives to admission are reliably implemented	Variable; supports complex care but may not be organised around short-cycle disposition	Variable; can be resource-intensive for complex specialty care	Variable; may improve inpatient efficiency and coordination
Interface with acute medicine	Core model	Shares diagnostic breadth and management of complexity; may receive patients requiring longer general medical admission	Provides definitive specialty input once trajectory is clearer; may advise early when specialist input is needed	Shares coordination functions, but usually emphasises inpatient continuity rather than the AMU interval alone

AMU: acute medical unit

AMUs or associated ambulatory pathways without downstream ward admission.⁵ In Singapore, this approach is most relevant for patients whose main need is diagnostic clarification, short-cycle treatment, risk stratification, or coordinated follow-up rather than prolonged inpatient specialty care.

International systematic reviews suggest that AMUs are associated with shorter hospital length of stay and may improve mortality, although effects on readmission vary between models and settings.^{4,5} Published Singapore evidence remains limited. Observational studies have reported shorter length of stay, higher rates of early discharge, and lower patient

bills in some acute medical models, while effects on readmission have not been consistent.^{9,10} These findings are encouraging but remain institution- and population-specific, highlighting the need for more systematic evaluation of local models.

Service development in Singapore has progressed beyond the published evidence. Several public hospitals have established front-door acute medical services, although their organisation and scope differ. National University Hospital, Singapore developed an internist-led AMU following its earlier acute medical team model, while Singapore General Hospital has operated an acute medical ward for selected medical

Table 2. Proposed Singapore dashboard for early acute medical care.

Domain	Measure	Definition/notes	Illustrative target or interpretation
Timeliness	Time to senior clinical review	Decision-maker assessment from AMU arrival or accepted referral	≥80% reviewed within 2 hours, subject to local case mix and staffing model
Flow	Time to disposition decision	Admit, transfer, ambulatory follow-up, or discharge decision recorded	≥70% with decision within 24 hours
Flow	AMU length of stay	Median hours in AMU for eligible cohort	≤36 hours, with case-mix adjustment
Admission avoidance	Direct discharge from AMU or ambulatory emergency care	Percentage of acute care episodes completed without downstream ward admission	Locally set; for mature AMU/ambulatory pathways, ≥40% may be an aspirational benchmark
Admission conversion	Conversion to inpatient admission	Percentage of AMU arrivals requiring downstream inpatient bed	Locally set and tracked by case mix
Safety	Unplanned ICU/HDU transfer within 24–48 hours	Percentage of AMU patients requiring ICU/HDU shortly after AMU care or transfer	Monitored as a balancing measure; unexpected increases should trigger review
Safety	7-day and 30-day unplanned readmission	Unplanned readmission after AMU discharge or ambulatory emergency care episode	Downward trend; risk-adjusted
Safety	In-hospital mortality	All-cause mortality during the index hospital episode among eligible acute medical patients	Monitored over time; risk-adjusted and interpreted with case mix
Care coordination	Medication reconciliation defects	Percentage with unintentional medication discrepancies within 24 hours	Downward trend; local benchmark, with <5% as an aspirational target where measurement is mature
Experience	Patient-reported experience measures	Examples include “understood the care plan”, “felt safe”, “knew when to seek help”	Upward trend over time
Equity	Outcome stratification	Dashboard outcomes stratified by age, frailty, comorbidity, and social risk	Gaps narrow over time

AMU: acute medical unit; HDU: high dependency unit; ICU: intensive care unit

patients.^{8,10} By 2022, at least 5 AMUs had been identified across Singapore public hospitals.¹¹ More recent developments include new AMUs at Woodlands Health and Ng Teng Fong General Hospital. These developments suggest that the policy question is no longer whether Singapore should introduce acute medicine, but how existing models should be defined, evaluated, and coordinated, and which elements should be adapted or scaled across different hospital settings.

The local policy challenge extends beyond the AMU itself. Older adults with multimorbidity often cross multiple service boundaries during a single episode of illness. Fragmentation has been described among Singaporean outpatients,¹² and transitions during acute illness may involve emergency, inpatient, specialist, and community care settings. Acute medicine should therefore connect with ambulatory care, hospital-at-home, community nursing, primary care, and specialist follow-up rather than function as an isolated inpatient service.

Further development should define a core set of functions for acute medical care while allowing institutional models to differ. Physical ward space alone is not an AMU. A credible model requires clear referral criteria from the emergency department, rapid access to core diagnostics, pharmacy and allied health support, structured review of frailty and functional risk, and pathways to ambulatory emergency care, supported discharge, or hospital-at-home. Senior clinical decision-making should be available beyond conventional office hours, when acute presentations and disposition decisions continue. Without these elements, an AMU may simply become another short-stay holding area, shifting crowding from the emergency department to the ward.

Workforce planning is central. Unlike the UK, Singapore does not organise acute medicine as a separate postgraduate certification pathway, but many relevant competencies already exist within advanced internal medicine and other disciplines. These include broad

assessment of undifferentiated acute medical illness, management of multimorbidity and frailty, clinical prioritisation, multidisciplinary working, ambulatory care, and discharge planning and coordination across care settings. Emergency medicine contributes complementary expertise in rapid assessment, resuscitation, and short-stay or observation care.¹³ The distinction is important—AMUs primarily serve adults with acute medical illness, whereas emergency medicine-led short-stay units may accommodate a broader range of selected conditions that do not require prolonged inpatient care. Workforce development should therefore strengthen these complementary capabilities rather than assume that a single professional model should cover all short-stay acute care.

Governance is equally important. Acute medicine should be implemented with defined interfaces and aligned accountability, rather than as an additional ward label or a diffuse shared responsibility. Clear arrangements are needed for referral from the emergency department, transfer to downstream general or specialist inpatient teams, escalation for clinical deterioration, and follow-up through ambulatory or community pathways. Admission rights, transfer criteria, and follow-up responsibilities should be explicit. If these arrangements are left to informal negotiation, the model will depend on personalities rather than reliable systems. Local adaptation is therefore essential when applying acute medicine principles in Singapore.^{14,15}

Measurement should be designed from the outset. A narrow focus on length of stay or bed occupancy risks creating perverse incentives if faster movement is not balanced against safety and patient experience. Singapore should use a small, shared dashboard (Table 2) that enables cross-site comparisons while supporting local improvement. Measures should capture timeliness, flow, admission avoidance, safety, care coordination, patient experience, and equity. Outcomes should be stratified by age, frailty, comorbidity, and social risk, because accelerated acute care must not benefit lower-risk patients while disadvantaging those with complex needs.

Public and professional expectations also require attention. Patients and families may equate admission with safer care, while clinicians may worry that avoiding admission shifts risk to the community. Acute medicine must therefore be linked to clear communication about diagnosis, uncertainty, safety-netting, and follow-up. Ambulatory emergency care and supported discharge are not lesser forms of care; they are appropriate and add value when the clinical plan, monitoring arrangements, and escalation routes are explicit.

Acute medicine has limits. It cannot compensate for insufficient inpatient beds, inadequate long-term care capacity, weak access to primary care, or workforce shortages. Its principal scope is the adult medical stream, and it does not replace appropriate surgical, paediatric, or other specialty acute-care pathways, nor should it justify premature discharge or inappropriate admission avoidance. Its contribution is more specific—to improve the reliability of the first 48–72 hours after acute medical presentation, when diagnostic uncertainty is high and decisions about admission, specialty transfer, or discharge shape the rest of the care episode.

CONCLUSION

For Singapore, the opportunity is to treat hospital crowding as a whole-system quality challenge rather than as a problem confined to the emergency department. Acute medicine offers a practical lever for doing so, provided it is implemented as an interface model with defined functions, trained staff, shared governance, and balanced measurement.¹¹ The next phase should not be rhetorical adoption but careful specification, evaluation, and scaling of what works in the Singapore context.

Ethics statement

Not applicable, as no participants were recruited.

Declaration

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