

The model was an inexpensive way to improve patients' satisfaction with constrained resources. It could also help clinicians to monitor waiting times, prioritise patients, and minimise the time spent away from frontline patient care.

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passion and open-minds on using new technology in patient care and health services.

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About the contributor

Dr Sun received her PhD from the Nanyang Technological University (NTU) in 2002. She joined HSOR in 2005 and has been a

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She was awarded the Healthcare Manpower Development Programme (HMDP) grant to study at The Harvard School of Public Health in 2009. Her current research interests are in clinical decision modelling, microsimulation, statistical modelling, and outcome evaluation using large observational databases.

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REAL WORLD RESEARCH THE FINAL LEG OF THE JOURNEY TOWARD IMPROVED HEALTH CARE



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Health research can be classified according to the various stages in the translation continuum, spanning the full spectrum of scientific discovery from basic science (bench) to clinical (bedside) to health services & systems research.

In my work at the Health Services and Outcomes Research (HSOR) department of NHG, I have seen the importance of investing in real-world research. While certain treatments or interventions may lead to favourable outcomes under ideal situations, the same cannot be said of the effects in real world situations. One begins to see that in the real world, a multitude of factors, other than the intended treatment, can determine what happens to the patient.

One such study involved an investigation into the effects of initially admitting critically ill medical patients from the Emergency Department (ED) to the general wards before transferring them to the medical intensive care unit (MICU).

Given that each MICU bed is a precious hospital resource, priority is often given to patients with serious but potentially reversible conditions who may benefit from more intensive observation and treatment

than is provided in the general ward. Emergency and critical care physicians understand that each inappropriate admission to the ICU may translate to one less bed for a patient who would otherwise have benefitted from intensive care. In a similar manner, inappropriate admissions of a medical patient to the general wards instead of the MICU may have disastrous consequences.

This was the motivation for a group of ED and MICU consultants from Tan Tock Seng Hospital to embark on the project with the ultimate goal of improving triage decisions. In the study, the magnitude of these indirect admissions, vis-à-vis direct admissions to the MICU from the ED was investigated. Patient outcomes included in-patient and 60-day mortality, MICU and total hospital length of stay (LOS). The study utilised a retrospective cohort design involving patients who were admitted to the MICU within 24 hours of presentation at the ED.

The evidence-based medicine movement has radically changed the way health professionals acquire and assimilate information relevant to patient care. Although observational designs are ranked lower than experimental studies

in the hierarchy of evidence, they are nevertheless a rich source of evidence for health services research (HSR).

In the case of the ED-MICU study, indirect admissions hypothesised to be harmful precluded the use of a randomised trial. Additionally, triage decisions and their consequences were best observed under real world situations rather than a stringently controlled environment. After all, the research question posed was a practical one placed in the context of the daily operations in a hospital setting and not with any underlying assumptions and pre-conditions.

HSR or what may be viewed as real-world research draws upon the field of Epidemiology for methods and techniques. Unlike clinical specialties, Epidemiology and HSR do not involve the delivery of care directly to the patient, but rather in the processes in the delivery of care which would have an impact on patient outcomes.

By identifying which treatments, investigations and interventions work best for whom, HSR is ultimately a useful tool for improving outcomes which matter to patients.