**Innovative Solutions to Improve Emergency Department Overcrowding in Malaysian Ministry of Health Hospitals**

Muniamal Krishnan¹, Ku Anis Shazura bt Indera Putera¹, Zalina binti Libasin¹, Nur Jihan binti Noris¹, Nur Nadia Renu binti Abdullah¹, Intan Syafinaz binti Saman @ Saimy¹

¹Institute for Health Management, National Institutes of Health, Setia Alam,40170 Shah Alam, Selangor

**Introduction:** An Emergency Department (ED) is a front door for a hospital where huge number of patients visit the department in order to access immediate treatment. By providing 24-hours non-stop service throughout the year, it is considered the busiest department compared to other departments available in the hospital.

**Objective:** To describe the overcrowding strategies implemented by the ED at state, major specialist, minor specialist, and district hospitals under the Ministry of Health (MOH) Malaysia in order to address overcrowding.

**Methods:** The sampling period for this cross-sectional study was October through November 2023. With the exception of special institutions, all 138 public hospitals under the MOH completed a self-administered checklist in order to document the overcrowding management strategies used by the ED. Based on Asplin et al (2003)’s ED crowding model, each strategy was then mapped into the input, throughput, and output components.

**Results:** For input component, the redirection policy strategy was implemented by 42.8% of state hospitals followed by major specialist hospital at 25%. On the other hand, step up admission under the cluster hospital initiative was also a favoured solution with 42.8% of major specialist hospital implementing it followed by 21.4% of state hospital. As for throughput component, all types of hospitals used bed watcher system to monitor the status of patient at ED. 42.9% of major specialist hospital implement bed watcher system, followed by 28.6% of state hospital, 14.7% of district hospital and 9.56% of minor specialist hospital. For bed manager strategy under the output component, with 71.4% for both state hospital and major specialist hospital, 42.9% from minor specialist hospital and 33.3% of district hospital implementing this, this is the most popular strategy throughout all components, followed by Discharge Lounge/Bay.

**Conclusion:** Strategies based on output component such as discharge lounge, and bed manager were the most popular strategy overall and were implemented by all types of hospitals while strategies in the input and throughput components were not as favoured. Hence it is recommended that hospitals broaden their attention to address all three components in their effort to overcome overcrowding at ED.

**Keywords:** Emergency Department, overcrowding, strategies