

COMMENTARY

A 6 Step Approach In Initiating Essential Emergency Critical Care Services In A Resource Limited Emergency Department Setting.

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Key Words: *6 Step Approach, Critical Care, Emergency Department, Essential Care*

ABSTRACT

The emergency departments of today no longer only cater for treatment of life threatening conditions as it also involves monitoring and lodging of critically ill patients pending admission to the wards in view of overcrowding and longer boarding times in the emergency. Application of critical care services will ensure that the patients who are critically ill and boarding in the emergency departments especially the red zones receive proper monitoring and ICU like care services. However, advanced emergency and critical care services require many resources which may not be possible in many resource limited facilities. This calls for the introduction of essential emergency critical care, a concept that provides the essentials of critical care in the emergency setting to ensure good monitoring and continuous critical care for lodging patients. In this article we introduce a 6 step method employed in a resource limited setting to implement essential emergency critical care services in the red zones of the emergency department.

BACKGROUND

The emergency departments all over the world including Malaysia have been hit with overcrowding, longer boarding times and longer waiting times for admission¹. This situation has been made worse with the ongoing covid 19 pandemic and its variants which have been more infective.

Association of missed assessments and treatments has been established to be related to overcrowding, lack of education and awareness among hospital staff². In an overcrowded setting the implementation of continuous education, awareness and accurate treatment can be affected.

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The patients who have critical illness awaiting for bed in the wards and boarding in the emergency departments should receive essential critical care services to ensure reduction in morbidity and mortality while awaiting beds in the acute wards or ICU setting³. The delay in admission or acute ward or ICU beds should not delay the best care for the critically ill.

The establishment of advanced emergency and critical care set up including the ED-ICU model may incur a lot of resources including additional space for the ICU model, critical care nurses and staff, supplies of invasive monitoring and procedures and system integration with the local ICU and this may not be achievable for all emergency departments and centers.

To establish an essential emergency critical care service in a resource limited setting is challenging. Thus in this article we describe a 6 step approach that was done in the emergency department of a tertiary hospital in Malaysia with high patient load to provide essential emergency critical care services to patients while boarding and awaiting beds while maintaining patients' assessment and treatment.

METHODS

The first step in setting up essential emergency critical care services is to establish its clinical governance. This is done by creating a committee to continue to provide and develop the essential emergency critical care services within the emergency department. The role of the committee is to establish protocols, carry out critical care initiatives and its continuous education.

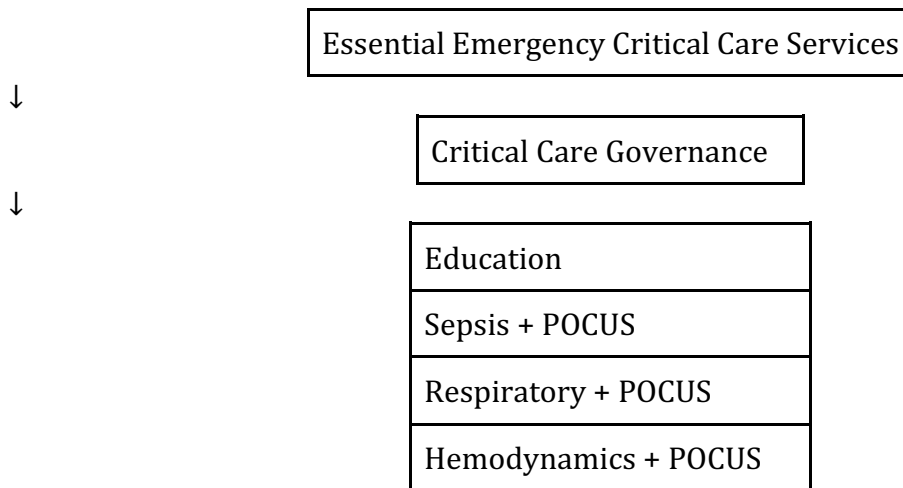
The second step in setting up essential emergency critical care services is focusing on hemodynamic assessment and stability. This is best established by creating a critical care chart within the red zones of the emergency department. A critical care chart that has the parameters of pulse, blood pressure, vital signs, respiratory or ventilator setting, blood gasses interpretation, vasopressor, fluids in and out charting is to be established and compulsory for critically ill patients.

The third step is to establish POCUS (Point of care ultrasound) among the critically ill. Making it mandatory for all critically ill patients and the red zone patients to receive a POCUS and critical care ultrasonography at least once within their stay in the emergency setting.

The fourth step is to establish continuous education in critical care topics. Incorporation of critical care topics once a month within the continuous medical education (CME) program of the emergency department and organizing a yearly fundamentals of critical care course to embed critical care education within the services of the emergency department.

The fifth method is to include sepsis guidelines incorporation into all sepsis patients in the emergency department. Using the latest guidelines of sepsis to guide treatment of septic and critical patients boarding in the emergency by fluids, inotropes/vasopressors, measuring lactate counts, blood c & s within one hour and initiating iv antibiotics must be stressed.

The sixth and final method is to incorporate ventilator management within the emergency departments. Education on basic mechanical ventilation including the modes, oxygen, tidal volume, PEEP, airway pressures, I:E ratio and respiratory rates must be a routine together with incorporating obstructive and protective lung ventilation strategies.



DISCUSSION

A critical care team composed of emergency physicians with special interest in critical care, medical officers and paramedics will provide a holistic approach in targeting all groups and improving services at all levels.

Formation of a critical care chart will help in evaluation of hemodynamic stability, continuous hemodynamic monitoring, input of fluids and output as well as vasopressor and inotropic requirements⁴.

Point of care ultrasound can be utilized for patients with undifferentiated conditions, preventing a mis-diagnosis, establishing fluid status and response to fluid challenge, as well as hemodynamics assessment using critical care echocardiography⁵.

Continuous essential emergency critical care education and incorporation of topics into the CME once a month which includes FOAM learning, blogs, podcasts on topics related to trauma critical care, surgical critical care, intensive care modules will help enforce knowledge in the field of critical care and improve its service delivery within the emergency setting⁶.

Inclusion of sepsis protocols will help in reducing the morbidity and mortality of septic and ill patients and coupling it with routine ventilator set up and monitoring with basic setting or advanced ventilation strategies will provide a holistic approach and addition of critical care in ill patients⁷.

CONCLUSION

The increasing cases of overcrowding in the emergency departments, higher boarding rates and waiting times for critically ill patients in the emergency department warrants critical care services provided by emergency physicians. Advanced critical care services in the emergency departments may take up resources. Thus in a resource limited setting, we would like to recommend initiating a 6 step approach to set up essential emergency critical care.

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