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Critical Care in the Emergency Department

Interviewee

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Your Landmark Study of Early Goal-Directed Therapy for High-Risk Patients with Infection Proved the Benefits of Providing this Therapy Early on, in the Emergency Department (Rivers et al. 2001). What Organisational Change was Needed to Bring Critical Care into the Emergency Department at Henry Ford Hospital?

The model is not unique in hospitals that see high-level acuity patients such as trauma, heart attacks and stroke. These hospitals' emergency departments (ED) divide the patients into geographic areas based on acuity levels, which are categories of illness, I through IV. The ED assigns nursing and doctor personnel based on acuity level. That format has been in our ED since we began over 30 years ago. With that model we were able to create a concept where patients receive higher levels of care in the ED before they go to the intensive care unit (ICU). We are able to do invasive monitoring and give a level of nursing care that's a little higher than most EDs, simply because we have been able to create that concept right upon hospitalisation.

In Your Study, did the Fact that the Intervention Saved Healthcare Resources as Well as Decrease Mortality Surprise You?

No, I am an intensivist as well as an emergency physician. One of the benefits of working in both places is that I am able to see a continuum of care between the ED and ICU. By providing critical care in the ED, patients not only do better, but you decrease hospital length of stay and healthcare resource consumption. Patients come off the ventilators quicker, they don't require as much haemodialysis, and therefore healthcare resource consumption decreases. We decreased hospital length of stay by an average of five days for septic shock patients. Duration of mechanical ventilation was diminished by about three days, and we were able to show a reduction in hospital costs of over US$12 million a year from treating sepsis early alone.

As a result of the early goal-directed therapy study, the institution had objective data that shows that this concept works, so they were able to expand the critical care bed area in the ED from 8 to 16. We doubled our ability to manage critically patients in the emergency room, and accommodated nursing care and physician coverage for the extra beds.

What are the Main Challenges for Implementing Critical Care Therapies in the Emergency Room?

It is one thing to have the data showing that it is cost-effective, but the model also requires physician and nursing coverage and physical plant capability, to manage patients for up to 24 hours. These patients may be on a ventilator or need advanced monitoring. Those equipment costs have to be accommodated. Basically all those costs are recouped, based on the cost savings that you have. The patients need the care. There's not a major hospital in the U.S., and I would say not even in the world, that do not have some delay in terms of patients being able to get to the critical care unit in a timely fashion. Every major hospital needs some ability to manage critically ill patients in the ED.

In 2002, You and Your Colleagues Wrote, "The Care Provided During the Emergency Department Stay for Critically Ill Patients has been Shown to Significantly Impact the Progression of Organ Failure and Mortality. Despite These Trends, Formal Critical Care Training for Emergency Physicians is Limited." (Rivers et al. 2002) Has the Situation Improved Since Then?

Yes, in the last few years critical care training was finally opened up for emergency physicians. They can now attain critical care training through internal medicine, anaesthesia, surgery and neurology. All those specialities have opened their pathways to emergency physicians to train in critical care medicine.

In 2009, You Wrote, "Future Emphasis Should be Placed on Overcoming Logistical, Institutional and Professional Barriers to the Implementation of Standardized Order Sets, Which can Save the Life of One Out of Every Five to Six Patients Presenting with Severe Sepsis and Septic Shock." (Rivers et al. 2009) What are the Main Barriers to Improving Yreatment for Patients Presenting with Severe Sepsis and Septic Shock?

The main barriers have to do with a paradigm shift. For example, with heart attack – two decades ago mortality was 30-40%, and now a heart attack is a priority, so if a patient comes in with chest pain there's a series of events that has to occur immediately without question that prevents that patient from dying. It is the same for stroke and for trauma. For some reason sepsis has not got the same aggressive attention, because people have not realised that this is very similar to other diseases.

The main barrier is a change in the paradigm of how people think about sepsis, that it is an emergency and that people die. Fifty per cent of people with septic shock will die. Once you create a paradigm that the first physician who sees the patient understands that this has a high mortality then people will change their approach.

Secondly, early recognition. Sepsis is not a very simple disease to recognise. Sometimes the patient may come in with symptoms of another disease, but it ends up being sepsis. Early recognition is very important, especially for the emergency departments, because the patients don't necessarily present very clearly.

Thirdly, being able to mobilise resources so that the emergency physician is not stuck with managing a critically ill patient. Colleagues throughout the hospital must cooperate with the ED so that you can mobilise the resources necessary to move that patient either rapidly to an ICU or the critical care staff come down and give the level of care necessary. It is not always the emergency physician's responsibility, but there must be a standard operating procedure so they can activate the resources that can get the patient aggressive care. We do that with heart attack, for stroke and for trauma patients. We have to change our paradigm where we now do that for septic patients. We have a sepsis alert, just as we do for myocardial infarction and so on. We see the critically ill patient right away, and provide those resources right up front.

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