

Quantifying the Quality of Care

Healthcare is big business: it costs a lot of money. Critical care is the place where a lot of that money is spent. That's why healthcare managers are scrutinizing that particular part of the business. As a result, hospital **INTENSIVE CARE UNITS** are being pressured to provide evidence of the quality of care they provide.

ACCORDING TO Dr. Tim Gould, an intensivist – a physician who specializes in the care and treatment of patients in intensive care – and consultant at the Bristol Royal Infirmary (BRI) in Bristol, England, “The government is starting to want to see value for money. Also, a lot of intensive care organizations in different countries now have to come up with quality outcome measures that can be used to quantify how good an intensive care unit is in terms of value. One measure is mortality, but the government also wants to see metrics regarding patient safety and quality of care.”

Long realizing the value of research, Dr. Gould wanted to be able to look at certain patient groups to see if various steps the ICU was taking – or not taking – had an effect on outcomes. He also realized that it's virtually impossible to do that kind of research on paper.

Moving away from paper

The BRI installed Infinity Omega patient monitoring systems at every bed in the 16-bed General ICU and deployed the Innovian clinical information system from Dräger.



Dr. Tim Gould, Internist and Consultant, Bristol Royal Infirmary.

Innovian replaced the ICU's manual charting, which consisted of a big A3 paper chart at the foot of every bed – one per day, per patient. If a patient had a four-week stay, the records were spread across 28 individual charts. Using that data for research was virtually impossible.

Now, Innovian automatically gathers data from bedside devices, including patient monitors, ventilators and fluid devices. “We're documenting more data than ever before and we don't have to worry about capturing that data,” says Dr. Gould. “The system automatically calculates patient scores to evaluate severity of illnesses.”

Comprehensive data capture

Eighteen months ago, Dr. Gould set up a critical care research group whose mission is to evaluate how the ICU complies with certain factors that have been set up as benchmarks of quality – such as specific care bundles for pneumonia patients.

“Although we do these things in our every day practice, we need to be able to prove that we do it,” says Dr. Gould. “Innovian's database capability makes it very easy to generate reports describing our compliance with a particular treatment strategy. The data capture is incredibly comprehensive and efficient. You can look at groups of patients with different conditions and see how well you do against national averages. It's a good way of confirming that the strategies, treatments and way we work here deliver good quality results.”

Supporting patient safety

Because prescribing of drugs can be a risk factor for patients in intensive care, Dr. Gould and his team have configured Innovian to include parameters of the drugs typically prescribed for ICU patients. By having a sophisticated prescribing system that contains a protection mechanism, the ICU can improve patient safety by reducing errors in transcription or drug dosages.

While Innovian was not designed to check drug interactions, Dr. Gould states, “The fact that Innovian lists the drugs in a pull-down menu format where they are written correctly with the appropriate dosage has improved the quality of our prescribing – compared with it being my handwriting on a paper form.”

Innovian is Web-based, so the staff can access the system from anywhere in the hospital – and even beyond. “If you're on call from home in the middle of the night and need to look at something that's not quite right with a patient, you can have



Because Innovian is Web-based, data captured in the perioperative environment can also be accessed in the critical care area.

all the information on hand to help with decision making,” says Dr. Gould.

Innovian also makes archived data easily accessible to physicians. “In a ward round in the morning, I can look at an event that happened in the night which the senior registrar was concerned about,” says Dr. Gould. “Or if a patient has outstanding problems, I can look at the archives to see the patient's medical history. Very comprehensive data is available to describe those kinds of episodes, so I can get a clear picture of what went on long after the event.”

Learning from history

Dr. Gould believes that anyone who is running an intensive care unit has a respon-

sibility to run as safe and as good a unit as possible. “Being able to look back at the activity in your unit using the database is very powerful because you have a very good description of what you're doing day to day, week to week, month to month with patients and their outcomes. You can target specific disease groups and look at those in more detail.”

What's the bottom line? “By ensuring that you have standardized, best-practice care for every patient, you will improve the overall quality of outcomes for patients. In addition, if you use a clinical information system to its full potential, it will allow you to improve the quality of care that you deliver to your patients,” explains Dr. Gould. **Kathie Peck**

Innovative technology at the point of care

The dual-screen Infinity Omega solution combines an Infinity Delta vital signs monitor with a medical-grade workstation that brings networked information – such as clinical applications, lab values, and DICOM images – to the point of care. Innovian is a Web-based clinical information system that can gather data from bedside devices in critical care and perioperative care environments and document care-related activities. This allows the ICU to compare patient status by analyzing vital signs and lab values together with patient care activities that physicians and nurses provide.