

Improving surgery

An independent study published by the Improving Surgical Outcomes Group has found that improved fluid administration during and after surgery improves patient outcomes and reduces average length of stay. *The Clinical Services Journal* reports.

A report by the Improving Surgical Outcomes Group (ISOG) has highlighted a number of hospitals that have achieved significant results using evidence-based practice to improve surgery. The group's study is a follow up to the report *Modernising care for patient undergoing major surgery*, published in 2005, and looks at how nine hospitals have implemented best practice to show significant improvements in patient recovery times, as well as significant cost savings. These include:

- Medway Maritime Hospital, Gillingham, Kent
- The Freeman Hospital, Newcastle
- Worthing Hospital, West Sussex
- Royal Alexander Hospital, Paisley
- University College Hospital, London
- Torbay Hospital, Devon
- York Hospital
- St Thomas' Hospital, London
- Royal Alexander Hospital, Paisley

The report highlights three areas for improved outcomes: objective pre-assessment of patient fitness, intra-operative fluid intervention and appropriate levels of critical care for high-risk patients. In particular, improved fluid administration both during and after surgery dramatically reduced post-operative complications and mortality while also reducing the average length of stay by a fifth.

This has been achieved using oesophageal doppler monitoring, which allows doctors to use fluids and drugs to optimise the flow of blood around the system, thus maintaining an adequate supply of oxygen to the body's organs and tissues. This avoids problems associated with reduced circulating blood volume, known as hypovolemia, which leads to insufficient oxygen being delivered to the organs and can result in organ failure. Akin to severe dehydration, hypovolaemia affects virtually every patient having surgery because of the combined effects of pre-operative starvation, the impact of

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the anaesthetic agents and trauma from the surgery itself.

FASTER RECOVERY

In January 2006, the National Institute for Health and Clinical Excellence (NICE) announced that it considers oesophageal doppler monitoring to be "standard clinical practice" in the NHS, yet the technology is currently used in only 2% of cases. Use of oesophageal doppler monitoring (ODM) in the Medway Maritime Hospital, the Freeman Hospital, Worthing Hospital and the Royal Alexandra Hospital all enabled patients to leave hospital sooner.

The Medway Maritime Hospital was able to open a new 10-bed high dependency unit (HDU) with the £1.1m they saved by using the technology. This was achieved through patients going home on average three days sooner, saving around £800 per patient. The new HDU will be used to support those patients whose overall condition means they need a higher standard of care following surgery.

"We have had very good results using oesophageal doppler monitoring. It has improved the quality of care for patients as they are healthier when they leave theatre, need less post-operative care and get home quicker," said Graeme Sanders, a consultant anaesthetist at Medway.



In the Freeman and Worthing Hospitals, none of the 118 patients fluid optimised during major bowel surgery died, whereas the average mortality rate for this type of surgery in England and Wales is 6%.

Doctors at the Freeman Hospital used a CardioQ oesophageal doppler monitor to help maintain fluid balance and blood circulation in the patients undergoing colorectal surgery. Patients using the monitor were fit for discharge after six days, and actually discharged after seven. Patients not using the system were discharged after nine days and in hospital two days longer.

The Department of Health data shows the average length of stay for major bowel surgery in England and Wales in 2004 was 13.5 days, nearly double that of optimised patients at the Freeman.

A study at the hospital also found that patients using CardioQ did not require

outcomes

unplanned admission into the hospital's critical care unit following surgery, in comparison with 11% of patients not using the monitor. Only 2% of patients that were fluid optimised during major bowel surgery suffered major complications post-operatively, compared to 15% in the control group.

"Newcastle's fast track programme is believed to be achieving among the lowest mortality, lowest readmission rates, and shortest length of stays being delivered in the NHS today," said Alan Horgan, the hospital's consultant colorectal surgeon. "Fluid-balance during and after surgery is incredibly important to patient well-being. Being able to monitor and maintain balance more accurately has allowed us to take days off patient recovery time. We have proven that it is possible to save the NHS both time and money, while also enhancing patient care."

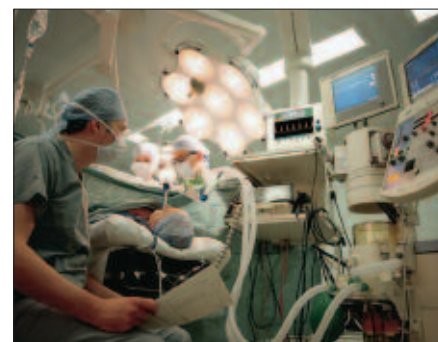
COST SAVINGS

Howard Wakeling, a consultant anaesthetist from Worthing hospital, in West Sussex, added: "The costs of introducing this very safe and easy to use equipment are minimal. The benefits for patients and the NHS are enormous."

A fluid optimisation trial for 128 patients undergoing bowel surgery, at the Worthing hospital, saw patients go back onto a full diet one day sooner at the hospital. They were ready for discharge one and a half days faster – representing a saving of £24,000 in reduced bed stays.

ISOG's new study clearly shows the benefits for patient outcomes and hospital finances. In fact, CardioQ costs £7,000 but the savings from reduced length of stay mean each monitor pays for itself in days.

Ewan Phillips, Managing Director of Deltex Medical (the company that makes the CardioQ), commented: "In the current



climate of financial deficits, embracing this technology should be a no brainer for the NHS. This report shows the clear benefits of using oesophageal doppler monitoring. We estimate that a million more patients a year could benefit from the monitor." +