Surgical black box may sew up malpractice cases

When an airplane crashes, investigators scramble to locate the black box so they can find out what was happening in the aircraft before the incident. An advance on that technology is now being tested at a Canadian hospital as a means of documenting what happens in an operating room. The question is how will that documentation be used.

"We have shown we can track errors to better understand the chain of events from minor errors to adverse events to adverse outcomes," says Dr. Teodor Grantcharov, Canada Research Chair in Simulation and Surgical Safety at the University of Toronto.

Grantcharov has been researching the use of a surgical black box for the past year at St. Michael's Hospital in Toronto. The technology involves several cameras and microphones, along with sensors to document physiological data and key aspects of the environment, such as temperature. Post-surgery the data are assessed by a performance team.

"It allows us to objectively reconstruct what happens," says Grantcharov. "When you're in the middle of the action, it's difficult to accurately assess what happened."

The intent of the new technology is to enhance health team performance, pinpoint errors and missteps (human and otherwise), and subsequently identify ways to prevent and address those issues. However, the data in an operating room black box could be used as evidence in medical malpractice suits unless precluded by legislation — in much the same way morbidity and mortality assessments made by hospitals and staff for the purpose of quality assurance and improvements are exempt from being used in court.

Grantcharov would like to see black box data exempted. "This should be protected and not used in court. It should be used to benefit the profession and the safety of patients. It would be wrong to fuel the litigation industry."

Courtesy of St. Michael's Hospital

Dr. Teodor Grantcharov (centre) is researching the use of surgical black boxes to enhance team performance, and pinpoint errors and missteps.

Data recorded by the black box system could well speak for patients unable to speak for themselves because they were under anaesthesia or unfamiliar with hospital procedures and protocol.

However, lawyer Ray Wagner, founder of "Wagners — A Serious Injury Law Firm in Halifax," says the data could also help surgeons who are being sued. "With the black box, critical procedures and techniques could be objectively assessed by peer surgeons when a poor outcome occurs. From the surgeon's point of view, the data would be confirmation that all was done right but the poor outcome was beyond their control."

Good medical care includes clear communication and thorough documentation, according to the Canadian Medical Protective Association (CMPA). Thorough documentation allows other health care professionals to know what was done and why and, therefore, assists in the ongoing delivery of safe care, says Dr. Gordon Wallace, managing director of safe medical care for CMPA. "This same documentation is also important for demonstrating the quality of care provided if the care comes into question at a later date."

Wagner acknowledges the documentation of surgical procedures could add a layer of anxiety to the operating room team. "But," he points out, "it may eliminate the need for lengthy litigation when the record confirms or denies the accusations of malpractice."

At present, the use of black box technology at St. Michael's is in the research stage and all operating room participants must give their consent to being recorded and monitored. Grantcharov anticipates this will change when the research project is complete. "Someday, this will be a standard part of an operating room much like a black box is in an airplane today." — donalee Moulton, Halifax, Nova Scotia

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