

Recording Clinical Video Improves Quality of Care and Patient Outcomes

Improving Patient Outcomes in Surgery

Quality control of medical devices and drug treatment is strictly organized and supervised. Efficacy and safety need to be demonstrated in large randomized trials. Content and quality of marketed devices and drugs are controlled by industry and government. This quality control is necessary to obtain reliable and predictable results and to detect rare adverse events [1].

Nevertheless, quality control of individual surgical treatments is almost nonexistent and, therefore, rare adverse events cannot be detected by the sheer number of interventions analyzed.

The outcome of surgery is both surgeon and environment dependent but the only indicators of quality are the results and complication rates. For most complication, it remains unknown whether they were preventable mistakes or unavoidable accidents.

Quality control in surgery is difficult to establish because the outcome varies with the surgeon and the surgical environment. However, systematic video recording of key elements or entire interventions has the potential of providing a quality control system for surgery. Moreover, since this is technically feasible today at low cost, there is a relatively inexpensive and easy way to effect a quality control process.

Challenges in changing culture

Patient and Provider privacy

Clinical videos present patient and health professionals' privacy issues. In some countries, any person involved in the process, whether a patient or a healthcare professional, has to be informed in advance about the nature and purpose of the recording. This person must also authorize the video registration. Data not included in the medical record are not necessarily accessible to the patient. However, in the United States, any type of personal health information must be accessible to

the patient, regardless of whether it is part of the medical record or not.

Legal Implications and Risks

It is natural that surgical team members will fear that cameras and observation may be used as a "Big Brother" tool and possibly as basis for disciplinary action. The systematic recording of surgeries could also present legal risks. Errors are recorded and could be used against the surgeons during medico-legal actions.

The concern is real because the medico-legal system is not always able to distinguish between unavoidable accidents and real mistakes during the procedure [1]. On the other hand, many legal actions are prolonged because of lack of reliable information and a recording would be helpful in determining what actually did occur. Where there is no negligence, the recording protect staff against unwarranted accusations and help resolve misunderstandings.

Learning from other industries

The airline industry introduced the flight data recorder and cockpit voice recorders (colloquially referred to as the Black Box) solutions that record the inter-cockpit communication as well as the aerodynamic and mechanical performance of the airplane.

Air forces of many countries have introduced advanced in-flight recording systems and instilled a culture of debriefing and learning. This has not only improved safety but also contributed to improved quality of the operational readiness. This has been achieved by introducing the right technology coupled with a cultural change to expose every action taken by the pilot, either alone in the fighter jet cockpit or part of a crew in planes and helicopters.

Factors Affecting Surgical Outcomes

Historically, it has been thought that the primary factors determining surgical outcomes are the

patient's condition and the skills and performances of the individual surgeon. However research [3] has shown that outcomes are affected by an operation profile that includes factors such as the team, the operative events, communication levels, the technical skills and decision making in addition to the operative environment and patient risk factors.

Overcoming cultural barriers and concerns

Results of a pilot study presented by Dr. Teodor Grantcharov [4], show that 75% of the adverse events that occurred during a surgical procedure, were not noticed by anyone in the surgical team. Therefore, the first step to improving performance is to be aware of quality issues and expose them.

To overcome the fear of being blamed, which comes naturally because of recording, some hospitals [3] have made it clear that the purpose of such observations is not to study individuals but processes and team performance. The goal is to observe patterns over a series of operations and not to examine individual deficiencies.

Fears of litigation can also be addressed. There is a misunderstanding among staff members who believe that a patient can bring an action without the need of expert surgical opinion. Today, risk management practices and patient safety initiatives encourage openness to scrutiny [5, 6] and if there is no negligence a recording will actually protect staff.

The Technological Tipping Point

A growing number of surgical centers have made it the norm to record operations, both for routine clinical procedures and for training and research purposes. Video-endoscopic surgery allows for video documentation of the procedure, and its use is shifting from mainly around educational and training purposes, into focus on quality improvement and reducing the medico-legal exposure.

More recently, head mounted cameras have been used to record the operative field, eye movement can be tracked and analysis of hand motion during the procedure is possible.

Orpheus – The tool for improved outcomes

The Orpheus is a scalable, vendor agnostic platform that captures clinical video and on screen data streams from numerous and simultaneous sources and locations such as OR, endoscopy, pathology, ophthalmology and wound care and helps implement a systematic approach to surgical quality and safety.

Clinicians using Orpheus have access, on demand and live, to clinical video and data streams regardless of their location. Orpheus equips clinicians to collaborate, coordinate and improve patient care intra-procedure or post-procedure by providing tools to perform evidence based case review and learning conferences. With Orpheus the healthcare organization eliminates the mishandling of medical videos and greatly reduces the exposure to medico-legal risks.

In summary, Orpheus is a flexible and powerful clinical video documentation solution that fulfills the needs for a complete surgical and treatment documentation and learning system. It helps transition the organization to value based care models by improving patient care coordination and delivery.

References

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