

Navigating a Path Toward Routine Recording in the Operating Room

Alexander Langerman, MD, SM,*✉ Catherine Hammack-Aviran, MA, JD,†
I. Glenn Cohen, JD,‡ Aalok V. Agarwala, MD, MBA,§ Nathan Cortez, JD,||
Neal R. Feigenson, JD,¶|| Gerald M. Fried, MD, CM,#
Teodor Grantcharov, MD, PhD,** Caprice C. Greenberg, MD, MPH,††
Michelle M. Mello, JD, PhD,‡‡ and Andrew G. Shuman, MD§§

Keywords: ethical, justice, legal, liability, operating room, privacy, recording, surgical video, video

(*Ann Surg* 2023;278:e474–e475)

Surgical video recording has shown promise in identifying best practices, documenting errors, and establishing an objective record of surgical activities for patient care, education, training, and research.^{1,2} These opportunities have fueled an increasing number of academic studies, commercial enterprises, and proposed legislation to increase the utilization of recording in the operating room. As recording becomes more routine and expands from intracorporeal images to full room video and audio capture, important ethical, legal, and social issues grow in importance and must now be addressed.

This is complex due to phenomena inherent in the surgical process. Patients are unaware of what happens once they are anesthetized, and the modern operating room is closed to

nonmedical observers, making the introduction of surveillance and transparency a significant shift in practice. Further, the multisubject nature of procedural recordings—depicting both the patient's body and the surgical team's performance—is a novel consideration for medical data protection and ownership policies. Herein we address uncertainties regarding ownership, liability risk, and privacy, and offer strategies to overcome barriers to routine recording.

OWNERSHIP AND ACCESS

The concept of ownership involves multiple potential rights, including rights to allow or restrict access, to produce derivatives or destroy source material, and to sell, lease, or distribute freely. None of these rights are universally established in clinical practice or law for surgical recordings. Multiple stakeholders have interests in these rights, from patients and providers to safety monitoring bodies and the judicial system. In particular, determining the right of access has immediate implications for liability and privacy management strategies.

Whether or not surgical video is considered part of a patient's medical record will determine if patients have a right to access their videos under existing federal and state health information privacy laws. An argument against treating surgical video as patient medical record data is that to date, the primary uses of surgical video have been for organizational and research purposes (eg, quality assurance/improvement, education and training, developing proprietary analytics) that are beyond the care of and decision-making for a particular patient. Yet, these recordings might also enable better individual care (eg, helping the care team investigate causes of post-operative complications or plan a reoperation), raising clinical arguments for systematically including procedural video in the medical record so they are available for future care. Some patients are also interested in recordings of their procedures for curiosity and understanding.³

Sharing surgical videos with patients, however, is not a straightforward proposition. Because patients are typically anesthetized for procedures, the culture and logistics of the operating room were not designed for their observation. The unprecedented, first-person view of their own operation may not only provide transparency and empowerment for patients but also create unnecessary anxiety, engender increased, uninformed scrutiny of clinicians' performance, compromise surgeon-patient relationships, and undermine trust. Many patients have erroneous preconceived notions and expectations of surgery³ and may misconstrue standard procedures such as surgical exposure, bleeding, tissue handling, and surgical team dynamics. Patient access to surgical recordings without appropriate context may reinforce these misperceptions, and may also reveal uncomfortable truths about surgical logistics

From the *Department of Otolaryngology – Head and Neck Surgery and Center for Biomedical Ethics and Society, Vanderbilt University Medical Center, Nashville, TN; †College of Law, Belmont University, Nashville, TN; ‡Harvard Law School, Cambridge, MA; §Department of Anesthesia, Massachusetts Eye and Ear Infirmary, Boston, MA; ||Southern Methodist University Dedman School of Law, Dallas, TX; ¶School of Law, Quinnipiac University, North Haven, CT; #Division of General Surgery, McGill University Faculty of Medicine and Health Sciences, Montreal, QC, Canada; **Department of Surgery, Stanford University, Stanford, CA; ††Department of Surgery, University of North Carolina, Chapel Hill, NC; ‡‡Stanford Law School and Department of Health Policy, Stanford University School of Medicine, Stanford, CA; and §§Department of Otolaryngology — Head and Neck Surgery and Center for Bioethics and Social Sciences in Medicine, University of Michigan, and the Veterans Affairs Ann Arbor Health System, Ann Arbor, MI.

✉alexander.langerman@vumc.org.

This article does not report human subjects research and does not require IRB approval.

Navigating a Path Towards Routine Recording in the Operating Room

This manuscript was based on ideas generated at the First International Conference on Ethical, Legal, and Social Implications of Surgical Recording in May of 2021, followed by subsequent discussions between the participants to generate the key concepts outlined in this manuscript. Drs. Langerman, Hammack-Aviran, and Shuman collaborated on the initial draft, which Prof. Cohen revised, and then the remaining authors further revised substantially. Participants who made editorial comments were not listed as authors but rather acknowledged.

A.L.: concept, idea analysis, drafting, final revision. C.H.-A: idea generation, analysis, drafting. I.G.C.: idea generation, drafting, revision. A.V.A., N.C., N.R.F., G.M.F., T.G., C.C.G., and M.M.M.: idea generation, revision. A.G.S.: idea generation, analysis, drafting, revision.

The authors report no conflicts of interest.

Copyright © 2023 Wolters Kluwer Health, Inc. All rights reserved.

ISSN: 0003-4932/23/27803-e474

DOI: 10.1097/SLA.0000000000005906

(eg, role delineation and trainee independence) that physicians may not be used to discussing in depth. Such conversations would place demands on already-limited clinical time.

LIABILITY IMPLICATIONS

A significant concern of clinicians and hospitals is how recordings may impact malpractice liability. At present, whether recordings would decrease or increase liability risk is uncertain. Recordings may help avoid unnecessary litigation if videos provide direct evidence of adherence to the standard of care. Conversely, if they show negligence, they could facilitate rapid settlement of claims, thereby decreasing litigation costs for all parties. Yet, the evidentiary value of surgical recordings may be limited because few surgical techniques are supported by clearly demonstrable standards of care. Further, videos may have biasing effects on juries due to the bloody, visceral reality of surgery, and laypeople's emotional and cognitive responses to surgical imagery require further study.

PRIVACY AND SURVEILLANCE

Surgical recordings differ from other medical data in that the patient is not the only subject; recordings also capture the surgical team's activities. Therefore, recordings implicate not only patients' privacy but also that of clinicians, and their multisubject nature strains established privacy frameworks. The purpose of the recording also limits the available strategies for privacy protection; whereas deidentification or "data minimization"⁴ may be employed in research and quality improvement settings, *clinical* utility would require retention of identifiable aspects.

Surgeons and surgical team members, however, may be uncomfortable with identifiable recordings of their "performance" shared out of context by patients. Clinicians may also fear how recordings might be used for credentialing, certification, promotion, compensation, and censure. If managed appropriately, surgical recording has the potential to improve operating room communication, teamwork, and performance.^{1,2} Conversely, without appropriate stakeholder buy-in and socialization, the scrutiny that comes with surgical recording may have a chilling effect on camaraderie, innovation, and willingness to perform high-risk procedures. Clinicians risk "performing for the camera" rather than focusing solely on patient care; trainers and trainees might avoid the learning experience of struggling through a difficult task; and teams could fear repercussions for deviating from perceived expectations.

PATHWAYS FORWARD

The implications above make surgical recording data highly sensitive, and hospital systems and/or government will need to clarify how and by whom these recordings can be utilized, controlled, shared, restricted, accessed, and commercialized—all of which have yet to be explored in the ethical, legal, and social issues research landscape. Until national guidelines and policies are developed, agreements between hospitals, patients, clinical staff, recording device manufacturers, data analytics providers, and/or payors must be transparent on how ownership and access rights for recordings are assigned. Standards for anonymizing surgical recording, obtaining patients' and clinicians' consent for recording, and permissible uses of recordings must also be developed before routine recording is possible.

If recordings are to be made available to patients, protocols will need to be developed for education,³ debriefing, and

clear communication explaining the content of surgical video recordings, as well as resources to equip surgeons for these discussions. There is potential for streamlining this process as artificial intelligence applications for automated markup and annotation of surgical videos⁵ become reliable for most surgical procedures.

To mitigate liability risk, recordings might be protected from disclosure under quality improvement privileges,⁶ or routinely deidentified and destroyed once the data have been analyzed. Alternatively, if recordings are to be made available to the judicial system, establishing a grace period before using recordings in legal proceedings until normative data on standards of performance can be established¹ and developing methods of jury instruction to mitigate biasing effects both may ease the exposure of early adopters. The goal is to avoid having liability concerns chill clinicians' and hospitals' willingness to allow surgical recording if these recordings can improve the quality and safety of surgical care. Retention standards, permissibility of editing, expectations for recording under various circumstances, and requirements for proactive analysis would all require clarification.

To further encourage adoption, the industry will need to emphasize the beneficial uses of recording while minimizing negative impacts on the surgical team. Methods to accomplish this include developing institutional policies that explicitly prohibit or limit punitive uses of data by hospitals or medical boards, making clear where standards apply and where variance is tolerable, and creating incentives such as reduced insurance premiums for participating in video-based quality improvement programs. Indeed, all involved stakeholders would assume a certain degree of exposure and pressure—personal, professional, financial, and regulatory—that must be acknowledged and ameliorated. Patients, practitioners, health systems, and regulators will need to see commensurate benefit to their care, careers, and infrastructures to confidently embrace operative recording.

In summary, surgical recording has not only potentially transformative benefits but also unaddressed challenges and risks. Policymakers and clinicians must actively address these barriers as we are on the precipice of a paradigm shift with tremendous potential. The above issues and their designated action items present a framework to architect this next frontier of operating room innovation and promote constructive implementation.

ACKNOWLEDGMENTS

The authors thank participants in the First International Conference on Ethical, Legal, and Social Implications of Surgical Recording (<https://www.surgicalrecording.org>), whose insights contributed to this article. They acknowledge Benjamin Ferguson, Sabha Ganai, Daniel Hashimoto, Margaret B. Mitchell, and Valerie G. Koch for their commentary on drafts of this article.

REFERENCES

1. Langerman A, Grantcharov TP. Are we ready for our close-up? Why and how we must embrace video in the OR. *Ann Surg*. 2017;266:934–936.
2. Dimick JB, Scott JW. A video is worth a thousand operative notes. *JAMA Surg*. 2019;154:389–390.
3. Gallant JN, Brelsford K, Sharma S, et al. Patient perceptions of audio and video recording in the operating room. *Ann Surg*. 2022;276:e1057–e1063.
4. Gerke S, Yeung S, Cohen IG. Ethical and legal aspects of ambient intelligence in hospitals. *JAMA*. 2020;323:601–602.
5. Chadebecq F, Lovat LB, Stoyanov D. Artificial intelligence and automation in endoscopy and surgery. *Nat Rev Gastroenterol Hepatol*. 2023;20:171–182.
6. Cortez N. A black box for patient safety. Twenty-Fourth Annual Clifford Symposium on Tort Law and Social Policy: patient safety: how might the law help. *DePaul Law Rev*. 2018;68:239–262.