

Adoption of routine surgical video recording: a nationwide freedom of information act request across England and Wales

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Summary

Background Surgical video contains data with significant potential to improve surgical outcome assessment, quality assurance, education, and research. Current utilisation of surgical video recording is unknown and related policies/governance structures are unclear.

Methods A nationwide Freedom of Information (FOI) request concerning surgical video recording, technology, consent, access, and governance was sent to all acute National Health Service (NHS) trusts/boards in England/Wales between 20th February and 20th March 2023.

Findings 140/144 (97.2%) trusts/boards in England/Wales responded to the FOI request. Surgical procedures were routinely recorded in 22 trusts/boards. The median estimate of consultant surgeons routinely recording their procedures was 20%. Surgical video was stored on internal systems (n = 27), third-party products (n = 29), and both (n = 9). 32/140 (22.9%) trusts/boards ask for consent to record procedures as part of routine care. Consent for recording included non-clinical purposes in 55/140 (39.3%) trusts/boards. Policies for surgeon/patient access to surgical video were available in 48/140 (34.3%) and 32/140 (22.9%) trusts/boards, respectively. Surgical video was used for non-clinical purposes in 64/140 (45.7%) trusts/boards. Governance policies covering surgical video recording, use, and/or storage were available from 59/140 (42.1%) trusts/boards.

Interpretation There is significant heterogeneity in surgical video recording practices in England and Wales. A minority of trusts/boards routinely record surgical procedures, with large variation in recording/storage practices indicating scope for NHS-wide coordination. Revision of surgical video consent, accessibility, and governance policies should be prioritised by trusts/boards to protect key stakeholders. Increased availability of surgical video is essential for patients and surgeons to maximally benefit from the ongoing digital transformation of surgery.

Funding KL is supported by an NIHR Academic Clinical Fellowship and acknowledges infrastructure support for this research from the National Institute for Health Research (NIHR) Imperial Biomedical Research Centre (BRC).

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Keywords: Minimally invasive surgery; Surgical video; Operative recordings; Data governance

Introduction

Surgical video is an objective record of intraoperative events and thus is a rich source of surgical data. Recording and subsequent analysis of surgical video has demonstrated utility in surgical skill assessment, and further application in correlation of surgical skill with patient outcomes.^{1–5} Moreover, the role of surgical video in improving patient care is expanding into utilisation for quality assurance, education, and research into advanced data-driven tools.⁶ Documentation of surgical procedures exclusively with retrospectively written operation notes, which currently remains the clinical

standard for the majority of hospitals worldwide, misses these opportunities to capture a wealth of important information that could be used to benefit patients, healthcare providers, and numerous other key stakeholders—especially in camera-dependent procedures such as robotic, laparoscopic, and endoscopic surgery. Recent reviews assessing the current role of video technology in surgery have highlighted the importance of routine surgical video recording, suggesting it would enable standardised, evidence-based surgical care and personalised surgical training through the use of applications such as video-based coaching.^{7,8}

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Research in context

Evidence before this study

Surgical video objectively records intraoperative events and thus is a rich source of surgical data. We searched PubMed and Web of Science, from database inception to 17th February 2023, for papers published in English using the terms “surgical video”, “operative video”, “video-assisted surgery” combined with “recording”, “education”, “consent”, “access”, “governance”, and “regulation” using the Boolean operators “AND” and “OR”. Our search yielded 1259 results. Recent reviews have highlighted potential surgical outcome assessment, quality assurance, education, and research benefits provided by utilisation of surgical video data, and the necessity for widespread adoption in realising novel opportunities in surgical data science. The current utilisation of surgical video recording within the National Health Service (NHS) in England and Wales is, however, unknown and the related policies and governance structures are unclear.

Added value of this study

This is the first nationwide study assessing the adoption of routine surgical video recording in England and Wales. Our findings demonstrate a minority of NHS services have adopted routine surgical video recording, and recording and data storage practices vary significantly. This provides data to direct NHS-wide coordination on surgical video recording and utilisation policies.

Implications of all the available evidence

The NHS must prioritise revision of surgical video consent, accessibility, and governance policies to protect patients, surgeons, and other key stakeholders. These policies must facilitate further availability of surgical video for patient and public benefit.

In the context of digital surgery,⁹ surgical video is not constrained by physical or temporal limitations on review or collaboration and opens new opportunities in surgical data science (SDS), an emerging field aiming to “improve the quality of interventional healthcare and its value through capture, organisation, analysis, and modelling of data”.¹⁰ SDS relies heavily on surgical video as an input for algorithms aiming to provide a data-driven approach to improving surgical outcomes.^{11,12} The need for high-quality, diverse surgical video data-banks is, therefore, evident.^{7,10,13–15} However, at present, a significant barrier to success in SDS and other digital surgery applications is the variable quality and small scale of current surgical video datasets. The largest notable open-source surgical datasets, such as Cholec80,^{16,17} JIGSAWS,^{18,19} and HeiCo,¹² typically comprise hundreds of videos, which is orders of magnitude smaller than mainstream computer vision datasets such as YouTube-8M^{20,21} and Berkeley DeepDrive,^{22,23} which comprise 6.1 million and 100,000 videos, respectively. Although, quality assurance protocols for surgical video are understandably higher.

Barriers to routine surgical video recording, for review, collaboration, or digital applications, may be technical, sociocultural, or regulatory.^{9,10} Whilst the issue of technical feasibility is largely solved,^{13,24} barriers, such as concerns regarding patient confidentiality and the potential for litigious use of surgical video, remain.^{9,10,25} A potential means of addressing these barriers is the modernisation of regulatory structures to address issues such as data ownership and governance. Developments in this area are in their infancy, with the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) recently producing consensus recommendations on surgical video data use, structure,

and exploration,⁶ and the Department of Health and Social Care releasing policy papers and an independent report highlighting the global importance of NHS data and prioritising its greater application in NHS services.^{26–28} The current utilisation of surgical video recording, and its surrounding legal and regulatory structures, are, however, unknown.

The primary aim of this study is to examine the utilisation of surgical video recording through a nationwide Freedom of Information (FOI) request to all acute National Health Service (NHS) trusts in England and all NHS boards in Wales. The secondary aims are to examine the surrounding technology, consent, accessibility, and governance infrastructure currently in place to facilitate surgical video recording.

Methods

Questionnaire design

The initial questionnaire was generated by two investigators (AY and KL). The questionnaire underwent iterative modification following consultation with experts in surgery, surgical video recording, and information governance. Questionnaire design needed to balance maximal information acquisition with accessibility to the non-surgeon respondents to FOI requests. The final questionnaire comprised 11 questions on the following areas: surgical video recording, technology, consent, access, and governance. The full FOI request is available in the [Supplementary Data S1](#).

FOI act requests

137 acute hospital NHS trusts in England were identified from Estates Returns Information Collection (ERIC) data, publicly available from NHS Digital.²⁹

Seven NHS boards in Wales were identified from Welsh NHS management information, publicly available from the Welsh Government.³⁰

Members of the public are entitled to ask for information held by public authorities under the FOI Act 2000,³¹ and should be provided with a response within 20 working days. This information must be requested in writing, including by email, and is responded to by a dedicated member of staff. There is no requirement for this member of staff to have specific expertise, but they are able to seek the advice of appropriate departments and colleagues when providing their response. FOI requests containing open questions were sent by email to all 144 acute NHS trusts/boards between 20th February and 20th March 2023 in accordance with the FOI Act. As the FOI Act entitles the public to request information from public authorities, ethical approval and informed consent were not required for this study.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Results

133/137 NHS trusts in England and all seven NHS boards in Wales responded to the FOI request, totalling 140/144 (97.2%) trusts/boards. Four trusts in England were unable to provide responses at five months following the request due to internal delays. Responding trusts/boards are listed in the [Supplementary Data S2](#).

Surgical video recording

Surgical procedures were routinely recorded in 21 trusts in England and one board in Wales, totalling 22/140 (15.7%) trusts/boards. Two trusts/boards responded that the request was not applicable. Trusts routinely recording surgical procedures in England were 'Teaching' (n = 8), 'Large' (n = 5), 'Specialist' (n = 3), 'Small' (n = 3), 'Multi-service' (n = 1), or 'Medium' (n = 1), as classified by the ERIC database. NHS trusts/boards where surgical procedures are routinely recorded are shown in [Fig. 1](#).

43/140 (30.7%) trusts/boards provided an estimated percentage of consultant surgeons who routinely recorded their surgical procedures, of these 17 trusts/boards provided estimates >0%. The median estimated percentage of consultant surgeons routinely recording their procedures was 20% (IQR 4.5–65%, n = 17).

Technology

65/140 (46.4%) trusts/boards reported the use of platforms/software to record, store, and/or edit surgical video recordings. The platforms/software reported are shown in [Fig. 2](#). The majority of responses did not provide annual costs for these products, exempting due

to commercial interests under Section 43 (2) of the FOI Act 2000. Seven trusts/boards did disclose annual costs for surgical video recording technology, the median cost was £15 000.00 (range £3305.00–£111 000.00).

Surgical video recordings were stored exclusively on NHS computer systems in 27 trusts/boards, using exclusively third-party products in 30 trusts/boards, and across both NHS computer systems and third-party products in nine trusts/boards.

54/140 (38.6%) trusts/boards limited the duration surgical video recordings could be stored for, whilst 15/140 (10.7%) trusts/boards did not limit surgical video storage.

Consent

Patients undergoing surgery are explicitly asked for consent to record their procedure as part of routine care in 32/140 (22.9%) trusts/boards. 48/140 (34.3%) trusts/boards reported asking for consent to record surgical procedures in a consent process additional to asking for consent to proceed with the procedure.

Consent to record surgical procedures explicitly included permission to use the recording for non-clinical purposes (e.g. education, research) in 55/140 (39.3%) trusts/boards. Consent for recording did not include use for non-clinical purposes in 26/140 (18.6%) trusts/boards.

Access

Policies for consultant surgeons accessing or using procedural recordings were available in 48/140 (34.3%) trusts/boards. A further two trusts/boards reported such a policy was in progress. 29/140 (20.7%) trusts/boards reported no such policy was available.

Policies for patients accessing or using their procedural recordings were available in 32/140 (22.9%) trusts/boards. A further 28/140 (20.0%) trusts/boards reported that although they did not have a specific policy relating to procedural recordings, patients could submit a subject access request (SAR) to request them. 21 (15.0%) trusts/boards reported no such policy was available.

Procedural recordings were used for non-clinical purposes (e.g. education, research) in 64/140 (45.7%) trusts/boards.

Governance

Governance policies covering the recording, use, and/or storage of surgical video recordings were available from 59/140 (42.1%) trusts/boards. A further four trusts/boards reported such a policy was in progress.

Most policies addressed visual and/or audio recording in general, rather than being specific to surgical video. Ownership and copyright of recordings typically remained with the trust/board in which they were made, irrespective of the ownership of the recording device. Recordings containing identifiable

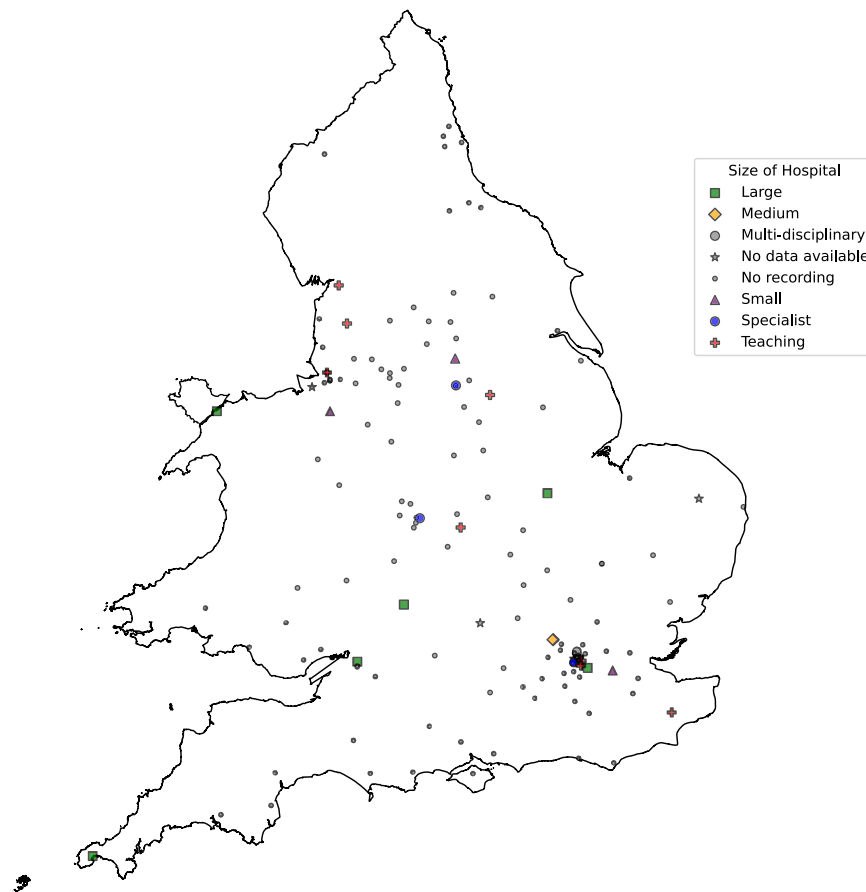


Fig. 1: NHS trusts/boards in England and Wales where surgical procedures are routinely recorded.

information were usually required to be stored on trust/board owned devices. Use of recordings for patient care, education, and research were generally permitted providing appropriate consent had been obtained and with appropriate anonymisation or pseudonymisation as required by the context. Many policies referred to different levels of consent for recordings, including for patient records, education, publication, and other specific uses. Sharing of surgical video data with third parties was commonly permitted for clinical purposes, with explicit patient consent and trust/board authorisation, or where there was another legal basis for sharing. Third parties must comply with the Data Protection Act (DPA) 2018 and General Data Protection Regulation (GDPR), and trusts/boards typically required data sharing and/or confidentiality agreements.

Discussion

This is the first nationwide study to assess the adoption of routine surgical video recording in England and Wales. We surveyed all acute NHS trusts in England and NHS boards in Wales, achieving 140/144 (97.2%)

responses. There is no publicly available data on global surgical video recording for comparison.

There is significant heterogeneity in routine surgical video recording practices in England and Wales. Only a minority of trusts/boards reported routinely recording surgical procedures, indicating a clear need for a coordinated approach to increase surgical video recording and utilisation within the NHS. Rates of surgical video recording were consistently low across teaching, specialist, multi-service, small, medium, and large trusts in England, perhaps indicating that recording of surgical video is currently decided at individual surgeon level.

Even fewer trusts/boards reported estimated percentages of consultant surgeons routinely recording their procedures. This is likely due to the decision to record the procedure lying with individual consultants at present, rather than being locally, or even regionally or nationally, mandated. This is in notable contrast with other modalities of surgical data, for example, surgical robotic kinematic and meta-data which is obligatorily recorded for every case performed on a given robotic platform and is not completely and/or immediately available to the surgeon, hospital, or patient by

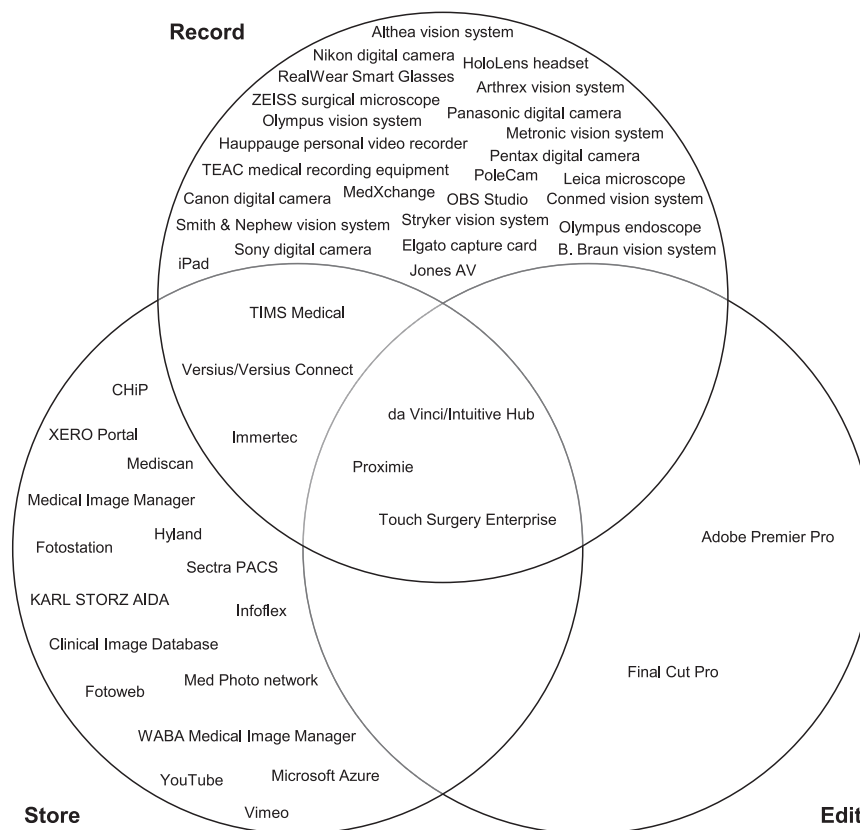


Fig. 2: Platforms and software used to record, store, and/or edit surgical video recordings.

default,^{32,33} but is shared with the robotic platform manufacturer.^{34,35}

It is likely that the reported estimates of the percentage of consultant surgeons routinely recording their procedures are an underrepresentation of current practice given anecdotal reports from surgeons who claim to record every case they perform, conflicting with the information provided in response to the FOI requests. This incongruity raises concerns over the level of oversight that information governance structures have over in-theatre practices.

Some trusts/boards commented that whilst surgical procedures were not routinely recorded, occasionally cases of particular note, interest, or educational value were recorded on an ad hoc basis. This highlights that whilst the technical infrastructure to record cases is often present, other barriers continue to prevent their routine use. It was also notable that surgical specialties recording procedures, where provided by trusts/boards, often perform robotic, laparoscopic, or endoscopic procedures which naturally lend themselves to recording due to their camera-dependent nature.

We asked trusts/boards for estimates of consultant, rather than trainee, surgeons routinely recording their procedures due to consultants holding ultimate

responsibility for the delivery of clinical care and to simplify the complexity of the addition of trainees as an additional, distinct stakeholder to consultants. Nevertheless, it is important to consider the impact of trainees on the decision to record a procedure. For example, a consultant may be less likely to record a procedure if they are not performing the entire operation, but, conversely, trainees may be more familiar with recording technologies and thus provide impetus to record. Furthermore, there may be more requirement for routine recording amongst trainees as they look to progress through surgical learning curves.

The recent SAGES Delphi consensus on surgical video demonstrated support within the surgical community for all surgical procedures to be recorded, relevant cases stored, and surgical video data to be collected holistically with appropriate formatting, quality assurance, and relevant metadata.⁶ Our findings of heterogeneous recording practices are concordant with the Delphi findings that there is a broad distribution of surgical procedural recording frequency and that diverse data structures are a barrier to multi-institutional studies involving surgical video.⁶

Trusts/boards reporting the use of platforms and/or software to record surgical video were almost three-fold

those reporting the routine recording of surgical video. This indicates that the required technology and infrastructure for routine recording are available, and indeed are already present in many hospitals. It is difficult to assess cost as a potential barrier to accessible recording technology as this information was not provided in the majority of responses, however, a few trusts/boards commented on negligible maintenance costs for recording equipment after the initial purchase or ongoing commercial partnerships related to research.

Just under half of trusts/boards used NHS computer systems and or third-party applications to store surgical video. The use of NHS computer systems provides a storage solution using in situ infrastructure with low additional costs and ensured compliance with regulatory requirements such as Digital Technology Assessment Criteria (DTAC) and GDPR. However, NHS computer system failures are a recognised issue^{36,37} and the large quantity of data generated by routine surgical video recording would have a significant impact on the trust/board's digital storage capacity, possibly requiring additional resources or even a radical change in patient data storage approach.⁶ We note that many responses commented on the loss of data from overwriting processes on hard drives which occurred automatically once storage capacity was exceeded.

Third-party applications offer a solution to this issue of storage through the use of their own servers and can provide additional capabilities such as annotation, telemedicine, integrated holistic data acquisition, and sophisticated AI or extended reality tools.³⁸ Nevertheless, whilst third-parties must comply with the relevant regulation, issues of data use, sharing, accessibility, and ownership remain—as was highlighted in the investigation following the processing of NHS patient data by Google's DeepMind.^{39,40} Whilst some responses referred to third-parties that provide healthcare-bespoke solutions for video storage, other responses referred to the use of mainstream platforms, such as YouTube and Vimeo, where licencing and privacy settings may further complicate the aforementioned issues. Ensuring these issues are addressed to the satisfaction of patients and healthcare providers is required as acceptability to these and other key stakeholders is vital for the sociocultural change required to introduce routine video recording.

Fewer than half of the trusts/boards reported limiting the duration of storage for surgical video data, whilst some trusts/boards reported explicitly that they do not limit the duration of storage. The Department of Health and Social Care requires adult health records including video to be retained for eight years, with the possibility of extension to 20 years if of justified value (e.g. for research purposes), before review for archiving.⁴¹ This discrepancy between national guidance and heterogeneous local implementation requires the urgent development unified frameworks to support the transparent, equitable, and ethical use of surgical video

data. Moreover, local and national guidance must keep pace with the changes in practice as the ongoing digital transformation of surgery provides novel opportunities and applications for surgical data.

Informed consent is fundamental to all patient-healthcare provider interactions, and is especially relevant to patients undergoing surgical procedures. Around half of the trusts/boards reported asking patients for consent to record their procedure, of which just under half of these reported asking this routinely as part of the process of consenting a patient for a procedure. This practice of routinely obtaining simultaneous consent to perform and record a procedure is an important facilitator of routine surgical video recording, and will be essential in order to capitalise on the vast quantities of surgical data that are generated but currently uncaptured and thus unutilised.

Consent to record surgical procedures explicitly included permission for non-clinical use in only around two-fifths of trusts/boards. Current General Medical Council (GMC) guidance does not require separate consent for visual recordings of internal organs or structures, laparoscopic and endoscopic images, ultrasound images, or radiographs occurring as part of routine care, and permits their anonymised use for secondary purposes such as education and research.^{42,43} The guidance, however, cautions that some apparently insignificant details contained within recordings may result in de-anonymisation, and consent for identifiable recordings is required.^{42,43} It, therefore, may be prudent for surgeons to ask patients for consent to record their procedures in order to ensure transparency and maintain patient autonomy and privacy. The validity of this consent for novel secondary purposes, such as algorithm training for SDS applications, is, however, unclear in the context of current public levels of digital literacy and ML understanding.^{44,45} As such, appropriate patient and public involvement and education will be important to ensure informed consent for surgical video recording and its routine uptake to avoid significant opportunity cost.

The issue of consent from other parties, such as surgeons, anaesthetists, and scrub nurses, who may be intentionally or inadvertently recorded when recording surgical procedures must also be considered. Whilst patients are legally able to record their own interactions with NHS staff without obtaining consent, the reviewed policies did not discuss the recording of staff initiated by non-patients. We note that for camera-dependent procedures, proprietary technology that automatically blurs extracorporeal images is available as a potential solution to this issue.⁴⁶

Policies for consultant surgeons to access or use procedural recordings were only available in around a third of trusts/boards, whilst policies for patient access were available in just over a fifth of trusts/boards. The SAGES Delphi consensus supported healthcare

providers and patients having primary access to surgical video data.⁶

Surgeon access to surgical video provides direct benefit to patient care by facilitating outcome assessment and quality assurance, and benefit to the wider patient population through use in education and research. For example, review of surgical video has been assessed to correlate surgical skill with patient outcomes^{1–5} and there is evidence supporting the use of ‘video-coaching’ to expedite progression through surgical learning curves,^{8,47} understand surgical errors,^{48,49} and improve surgical performance.^{50,51} Use of surgical video by healthcare providers must also maintain patients’ privacy, dignity, and autonomy, as per GMC guidance,⁵² and patients have the right to be informed about the use of their data, to stop or restrict processing of their data, and to have their data erased, as per the DPA.⁵³

Access to a person’s own personal data is also permitted by the DPA.⁵³ Personal surgical video data may have use in explanation of disease pathology, operative decision making, and future treatment planning for some patients, though the need for universal procedural video review by patients is unclear given surgical video data requires interpretation with relevant expertise in order to be properly understood. There are also concerns from surgeons regarding the potential use of surgical video litigiously in the event of an operative or post-operative complication, which is anecdotally a significant barrier to routine procedural recording.³⁸ Nevertheless, the objectivity of surgical video in documenting operative events is invaluable in protecting all stakeholders, especially compared to current documentation in operation notes.^{54–56} For example, South Korea responded to concerns of surgical malpractice by mandating operative recording at the patient’s request.^{57,58}

A further fifth of trusts/boards highlighted a SAR as a mechanism for patients to request surgical video from within their medical records, under the DPA. The distinction between a SAR and a specific policy as a means for patient access to their own surgical video likely has little practical impact on data accessibility, but may reflect differing levels of preparedness for the digitisation of surgery across trusts/boards in England and Wales.

The need for modernisation of surgical video accessibility policies for current and future digital surgical practice is, therefore, evident. These policies must protect all key stakeholders to incentivise the routine recording of surgical video required for patients and surgeons to maximally benefit from the multitude of clinical, educational, and research opportunities this will enable.

Procedural recordings were used for non-clinical purposes in fewer than half of the trusts/boards, indicating significant scope for the increased utilisation of

surgical video across England and Wales. Multiple systematic reviews support the utility of video-based surgical education in surgical training^{59–61} and there is clear demand amongst surgeons for educational surgical video, as demonstrated by the popularity of YouTube video in case preparation.^{62,63} There are also novel educational opportunities for surgical video, such as virtual logbooks containing surgical video and relevant metadata for a more holistic record of training or practice progression, and for continuing professional development by video comparison of different surgical techniques. Furthermore, ongoing research involving surgical video data promises the clinical and educational benefits of a “collective surgical consciousness”,¹⁵ allowing surgeons to benefit from data-driven insights from the totality of the surgical community’s experience. The potential for patient benefit provided by these applications is immense; AI-driven tools for performance evaluation, skill assessment, and complication analysis are currently available,^{10,13,48,64–67} with tools for accreditation and licencing on the horizon.^{68,69} The need for a nationwide increase in the utilisation of surgical video data, in order to further leverage this additional educational and research value, is evident.

Governance policies were only available from around two-fifths of trusts/boards, however, these were rarely specific to surgical video data. Although these policies are clear on recording ownership and copyright, requirements for their access, use, and sharing in relevant contexts, and storage protocols, governance policies specific to surgical video data are needed. This is because surgical video is distinct from still medical images, for which most of these governance policies were designed, in its capture of surgical gestures and instrument actions and their consequences, in addition to patient anatomy. Therefore, revision and wider adoption of surgical video governance policies is needed to ensure regulatory structures are relevant to current and future practice. Given the current low availability of these policies in England and Wales, trusts/boards may benefit from national guidance to achieve this. Furthermore, improved governance policies nationwide may increase the acceptability of routine surgical video recording to key stakeholders, and thus usher a transition from individual surgeon-led recording practices to surgical community-led recording practices.

There is support within the surgical community for surgical video data-driven applications for patients, surgeons, researchers, scientific societies, healthcare institutions, MedTech companies, health insurers, public institutions, and governments, including data sharing between multiple stakeholders after primary collection.⁶ Whilst it is clear that all of these entities will benefit from increased data availability and access, governance policies must find a balance that protects key stakeholders but does not impede research and collaboration aimed at patient benefit. Policies should also

standardise surgical video recording practices to meet quality thresholds and use universal data structures, thus ensuring efficacious data generation.

Issues surrounding surgical video ownership and access are particularly challenging due to multiple stakeholders having simultaneously justifiable claims to the data. Whilst most trusts/boards claim ownership and copyright to surgical video recorded within their premises and grant access based on clinical need, patient consent, managerial authorisation, or legal requirement, this model for practice is being challenged by innovations in the operating theatre. The recent rise of cloud-based solutions to surgical video recording have shifted data storage from within hospitals to external servers^{46,70,71} and the increasing adoption of surgical robotic platforms as all-in-one surgical solutions has combined instrument, vision, and clinical context with kinematic, automated performance, and registry data within siloed ‘ecosystems’.^{35,72} These increasingly capable and complex technologies undoubtedly provide opportunities to innovatively improve patient care, and, as such, significant commercialisation potential for third-parties. Modern governance policies are, therefore, required to ensure this innovation is achieved transparently, equitably, and ethically, and the benefits of commercialised surgical video data are appropriately shared between patients, health services, and third-parties.

These issues are not unique to the NHS—the SAGES consensus recommendations are in response to a “digital revolution” in American surgical practice,⁶ and a recent Dutch cross-disciplinary survey highlighted hesitancy amongst stakeholders to adopt surgical recording practices within current governance structures.²⁴

Our study has a number of limitations. Although all 144 NHS trusts/boards in England and Wales provided acknowledgement of our FOI request, we did not receive a response from four trusts in England. The accuracy of the estimates of current recording practices we have aggregated are dependent on the accuracy of measurement at local level, which is challenging to independently verify. We were not able to assess the financial impact of surgical video recording on trusts/boards given the low reporting of these costs in the responses we received. We were also unable to assess adoption of routine surgical video recording in private healthcare providers, as they are not required to respond to FOI requests.

In conclusion, this study is the first to assess the nationwide adoption of routine surgical video recording in a large publicly funded healthcare system. There is significant heterogeneity in surgical video recording practices in England and Wales. This study found a minority of surgeons routinely record surgical procedures, with current practice determined at local or individual surgeon level, although a discrepancy between

the available data and actual practice is possible. Surgical video recording and storage technologies are widely available, and are in situ in many hospitals, however, their use is uncoordinated between trusts/boards, indicating a unified approach within the NHS may benefit nationwide collaboration. Revision of consent processes to routinely obtain consent for procedural recording is essential to ensure the transparent and ethical collection and use of surgical video data. Modernisation and wider adoption of governance and accessibility policies specific to surgical video should be prioritised to ensure key stakeholders are protected and acceptable and standardised recording practices can be introduced at scale. The potential benefits of increased surgical video data utilisation are clear; routine recording will increase the availability of this important data, allowing patients and surgeons to maximally benefit from the ongoing digital transformation of surgery.

Contributors

AY—literature search, study design, data collection, data access and verification, data analysis, data interpretation, writing, figures, decision to submit.

KL—literature search, study design, data access and verification, data analysis, data interpretation, writing, figures, decision to submit.

CS—data analysis, data interpretation, writing, decision to submit.

JC—data analysis, data interpretation, writing, decision to submit.

JK—study design, data analysis, data interpretation, writing, decision to submit.

Data sharing statement

The datasets generated during the current study are available from the corresponding author on reasonable request.

Declaration of interests

The authors have no conflicts of interest to declare that are relevant to the content of this article.

Acknowledgements

KL is supported by an NIHR Academic Clinical Fellowship and acknowledges infrastructure support for this research from the National Institute for Health Research (NIHR) Imperial Biomedical Research Centre (BRC).

JK is a share holder in Surgease Ltd and Medical iSight Ltd.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.eclinm.2024.102545>.

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