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The ethics of video-recorded informed consent: A qualitative study of expert perspectives

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Abstract

Introduction: Informed consent is a fundamental process, yet standard written documentation occasionally fails to capture the nuanced interactions of clinical encounters, contributing to increasing medical litigation. While these challenges span the broader Malaysian healthcare system, they carry significant implications for primary care, where high patient volumes and complex consultations require a delicate balance between clinical efficiency and robust documentation. Video-recorded informed consent (VIC) offers a high-fidelity alternative, although its viability remains largely unexamined. This study investigated the ethical, legal and operational challenges of implementing VIC within contemporary medical practice.

Methods: This study employed a qualitative design to navigate an intervention that is not yet standard practice. Purposive sampling was used, and 10 experts comprising healthcare professionals, institutional stakeholders and legal experts were interviewed. Data were analysed inductively and deductively based on Beauchamp and Childress's Four Principles of Biomedical Ethics.

Results: Thematic analysis revealed four themes: consent for recording, privacy and confidentiality, legal implications and systemic resource constraints. Experts recognised VIC's capacity to preserve critical nonverbal cues and nuanced interactions, offering superior evidentiary value compared with written records. However, significant ethical and administrative tensions were identified, particularly regarding the logistical friction of a 'dual consent' model and heightened anxieties surrounding data security and patient privacy.

Conclusion: While VIC can enhance communication and disclosure fidelity, its integration depends on resolving privacy, legal and resource challenges. Sustainable adoption requires balancing digital ethical risks with technology that elevates patient-centred care. For general acceptance, standardised operating procedures for consent workflows and data protection are essential.

Introduction

Informed consent (IC) is a fundamental process that underpins the ethical and legal relationships between physicians and patients. It serves as an active medium for information exchange, enabling patients to make autonomous choices regarding their healthcare.[1] In primary care, invasive or higher-risk procedures demand a robust IC process to uphold patient autonomy and mitigate medicolegal risks.

Upholding patient autonomy requires the comprehensive disclosure of relevant information, the exercise of voluntary choice and the definitive execution of that decision.[2] In Malaysia, the Malaysian Medical Council (MMC) explicitly delineates these responsibilities for registered medical practitioners, including the need to warn patients about potential material risks, adhere

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to strict documentation standards and recognise the narrow legal exceptions where IC may be bypassed.[3]

Malaysia's medical negligence landscape has shifted from paternalistic practices to patient-centred autonomy, accompanied by a marked rise in litigation costs.[4] Many of these malpractice claims stem from poor doctor–patient communication, deficiencies in the IC process and substandard medical documentation.[5] Despite the digital shift to electronic health records, modern documentation burdens physicians with heavy administrative loads that contribute to burnout and inefficiency.[6–9] Thus, recording of the IC process or video-recorded informed consent (VIC) may provide a dynamic means of capturing communication nuances and enhancing the evidentiary value of the record.[10,11] However, its translation to routine care remains unexamined in Malaysia. Specifically, there is a lack of empirical insights into how Malaysian clinicians and patients navigate the ethical dilemmas of video privacy, the legal evidentiary implications and the operational logistics of implementing VIC in primary care clinical settings.

Beauchamp and Childress's Four Principles of Biomedical Ethics (autonomy, beneficence, nonmaleficence and justice) provide a shared framework for medical and legal professionals to evaluate digital transitions such as VIC.[12–14] While video recording may safeguard against miscommunication (nonmaleficence), it can also disrupt therapeutic relationships (beneficence) and raise issues regarding resource allocation and privacy (justice and autonomy).[12,14]

While general MMC consent and audiovisual recording guidelines exist, specific operational frameworks governing the routine use of video recording of IC for clinical documentation remain limited. Consequently, there is an imperative need to investigate how legal and medical experts specify and balance these competing prima facie obligations, weighing the verifiable documentation of autonomy against risks to confidentiality, resource equity and doctor–patient relationships.

This study addresses these critical gaps in the literature by examining video recording as a novel documentation tool within the clinical IC process, specifically investigating the ethical, legal and operational challenges of implementing VIC in contemporary Malaysian medical practice. Given that VIC is not yet established in routine medical practice, this study employs hypothetical scenarios to evaluate its feasibility among medical and legal experts; lay patients are intentionally excluded at this stage, as evaluating prospective workflow and legal impacts requires deep familiarity with the clinical ecosystem. Furthermore, by framing the investigation around these simulated scenarios, this research explores the distinct challenges and opportunities anticipated by Malaysian professionals.

Methods

This study employed a qualitative descriptive design utilising scenario-based vignettes to investigate perceptions of VIC in Malaysia.[15] Purposive sampling was employed to recruit three distinct cohorts of key stakeholders: (1) healthcare institutional leaders and policy administrators, (2) practising medical specialists routinely performing high-risk or invasive procedures and (3) legal professionals specialising in medical negligence litigation or healthcare law. Participants were identified through public institutional directories, professional society conferences or events and academic/clinical network databases. Formal invitations outlining the study objectives, participant rights and confidentiality protections were sent via email and in professional correspondence. Follow-up contacts were initiated 2 weeks post-invitation to optimise response rates, with recruitment continuing until data saturation was reached within each cohort.

Data were collected through semi-structured, one-on-one interviews, conducted either in person or via secure video conferencing platforms. After written IC was obtained, participants were presented with the hypothetical scenarios. A pilot-tested interview guide was used to facilitate dialogue, focusing on the acceptance of VIC, perceived impact on patient autonomy and the therapeutic alliance, logistical challenges (e.g. resource allocation and data security) and its potential utility in dispute reduction. Data were collected over 5 months from September 2022 to January 2023. Individual sessions ranged from 17 to 34 minutes in duration. All interviews were conducted primarily in English, although occasional Malay language expressions were utilised by participants during interactions. Audio recordings were transcribed verbatim. Any

localised Malay terms or phrases were directly translated into English during the transcription phase by members of the research team, who are native, bilingual healthcare professionals (HCPs), ensuring contextual and linguistic accuracy.

To maintain analytical consistency and methodological rigour, a team of at least two researchers conducted all interviews, with one lead investigator serving as the consistent co-interviewer across all sessions. Potential power dynamics and reflexivity biases were explicitly addressed prior to data collection. None of the interviewers held supervisory, administrative or reporting relationships with any of the participants. To minimise social desirability bias, the interviewers maintained a neutral stance when presenting the hypothetical vignettes.

The hypothetical vignettes were clinical scenarios developed through an iterative process by the research team. Content was informed by a comprehensive review of the clinical and medicolegal literature on IC, medical negligence cases and electronic health record implementation, combined with the team's collective clinical, administrative and legal expertise. Before full data collection, the interview protocol and vignettes underwent informal preliminary field testing with two initial expert participants (one clinician and one medicolegal administrator). This step evaluated the clarity, clinical realism and relevance of the scenarios. Minor adjustments to phrasing and contextual detail were made based on their feedback to ensure that the vignettes triggered meaningful discussions without leading participants.

The transcripts were analysed via thematic analysis, following the framework method to allow for both deductive coding, guided by Beauchamp and Childress's Four Principles of Biomedical Ethics,[12,13] and inductive coding for emerging logistical or contextual themes. To ensure comprehensive analytical coverage of the topic, the research team comprised a multidisciplinary group of clinician researchers, medical law specialists, healthcare bioethicists and experts in digital health systems. This diverse composition allowed the team to evaluate the clinical, legal, technological and ethical dimensions of VIC without introducing a professional bias. Two independent reviewers coded the transcripts to ensure inter-rater reliability, with discrepancies resolved through consensus. Following independent initial coding, the two researchers met at regular intervals to compare code application, evaluate inter-coder alignment and refine the evolving codebook. Any coding discrepancies or ambiguities regarding thematic categories were discussed with other researchers and resolved through peer debriefing. In cases where consensus could not be reached between the primary coders, a third author was consulted to adjudicate the disagreement until a final consensus was established.

Data collection and thematic coding proceeded iteratively to monitor for data saturation, defined in this qualitative descriptive study as the point at which no new codes, sub-themes or conceptual insights emerged from subsequent interviews regarding the hypothetical vignettes. Saturation was evaluated across the overall sample as a unified expert panel. By the eighth and ninth interviews, the research team confirmed that the codebook had stabilised and thematic redundancy was achieved.

While the panel was categorised into three functional stakeholder groups (HCPs [n=5], state health administrators [n=3] and legal experts [n=2]), legal and ethical dimensions were heavily triangulated across the dataset. Consequently, the specialised inputs from the legal practitioners (n=2) corroborated and consolidated the legal themes raised across the broader cohort, ensuring robust informational redundancy without requiring further recruitment. This study was approved by the institutional and national research ethics committees.

Results

A total of 10 key experts were interviewed (refer to **Table 1** for the demographic background and **Table 2** for the professional profile of the participants). Two interviews were conducted online, while the remaining interviews were held in person. The cohort comprised HCPs (n=5, 50%), regulatory or institutional stakeholders (n=3, 30%) and legal experts (n=2, 20%). The sample was predominantly women (n=8, 80%). Most participants were aged 40–49 years (n=8, 80%), whereas only 10% were aged 30–39 (n=1) and over 60 years (n=1).

Table 1. Demographic background of the key experts.

Variable	Sub-category	Frequency (n)	Percentage (%)
Expert group	Stakeholders	3	30%
	Healthcare professionals	5	50%
	Legal experts	2	20%
Sex	Male	2	20%
	Female	8	80%
Age (year)	30–39	1	10%
	40–49	8	80%
	50–59	0	0%
	≥60	1	10%

Table 2. Professional profile of the key experts.

Participant ID	Professional profile and background
P1	Medical doctor in a state health office handling medicolegal issues and complaints (>10 years of experience) with a master's degree in medical law
P2	Medical doctor in a state health office handling medicolegal issues and complaints (>10 years of experience)
P3	Medical record officer with >20 years of experience across various public hospitals, health clinics and state health offices
P4	Medical record officer with >20 years of experience across various public hospitals, health clinics and state health offices
P5	Senior law lecturer (>20 years of experience) specialising in medical law research and teaching at a Malaysian university
P6	Medical lecturer (>10 years of experience) teaching medical law and medical ethics in a Malaysian university
P7	Consultant surgeon in a public hospital (>20 years of clinical experience taking surgical informed consent and managing departmental complaints)
P8	Practising medicolegal attorney (>10 years of experience) handling medical negligence litigation, informed consent and documentation claims
P9	Medical lecturer with primary care background, teaching medical ethics and informed consent; holds advanced degrees in bioethics and medical law
P10	Consultant obstetrician and gynaecologist (>20 years of experience in public and private practice) managing daily clinical consent, documentation standards and complaints

Rigorous thematic analysis of the interview transcripts revealed four primary, interconnected themes outlining the challenges of VIC in Malaysian clinical practice. The thematic analysis was mapped onto the Four Principles of Biomedical Ethics framework (autonomy, nonmaleficence, beneficence and justice),[13] presented in **Table 3**, to structure the empirical findings. This framework provided a structured lens to evaluate the bioethical, legal and operational nuances of implementing VIC in the Malaysian healthcare system. These main themes included (1) consent for recording, (2) privacy and confidentiality, (3) broader legal implications and (4) systemic resource constraints.

Table 3. Bioethical framework mapping for the video-recorded informed consent findings

Beauchamp and Childress's principles	Corresponding study findings	Key sub-themes to include
1. Respect for autonomy	Process of obtaining consent for recording	Voluntariness on camera, avoiding implicit coercion, explicit dual consent (consent to film vs consent for treatment) and right to withdraw consent
2. Nonmaleficence (avoiding harm)	Privacy and confidentiality	Protecting patients' visual/biometric data, mitigating cyber vulnerability, preventing loss of privacy and avoiding legal exposure for clinicians
3. Beneficence (promoting good)	Broader legal implications	Enhancing the evidentiary value of the record, clear risk disclosure, resolving malpractice disputes objectively and protecting the doctor–patient therapeutic relationship
4. Justice (ensuring fairness and equity)	Systemic resource constraints	Equitable access to recording infrastructure, financial burden on public vs private clinics, storage logistics and administrative workload distribution

Consent for recording

Incorporating VIC adds a layer of complexity, as patients must provide explicit consent not only for the treatment itself but also for the recording of that session. From the experts' perspective, this dual consent requirement enhances patient autonomy, empowering individuals to have greater control over their healthcare interactions. By explicitly agreeing to the recording, patients can feel more secure in their decision-making, which fosters trust in HCPs:

'…there has to be consent to have this [VIC] recorded'. (participant 8)

'…have to take video recording consent on top of [procedure/informed] consent'. (participant 2)

"…means there's an extra consent for that [VIC]". (participant 9)

Moreover, the necessity for mutual agreement between patients and providers underscores the collaborative nature of the consent process. This partnership is essential in making providers feel that patients are respected and valued, as both their preferences and concerns are acknowledged, as mentioned by participant 6: *'…both [patients and doctors] parties must agree to this'. [emphasis added]*

According to the participants, patients must be given the opportunity to review the recording. This review allows patients to confirm that the recording accurately reflects their consent and the information provided by HCPs: *"Then, we [patient and doctor] have to see the recording, because later, they [patient] can claim, 'this is not my recording'". [emphasis added] (participant 4)* Enabling patients to verify the content ensures that the risk of future disputes regarding the authenticity of the consent is significantly reduced. This practice not only enhances transparency but also reinforces HCPs' ethical obligation to uphold patient rights and maintain trust in the therapeutic relationship.

While the integration of the VIC process adds complexity by having dual consent, it ultimately serves to enhance patient autonomy, trust and the overall integrity of the consent process, as mentioned by participant 2: *'[VIC] promotes autonomy to the patient because with video recording, you have said more [detail] compared to written; what patients say may not be documented'. [emphasis added]* By prioritising explicit consent and allowing for review, HCPs can navigate the ethical challenges associated with this approach.

Privacy and confidentiality

Protecting patients' privacy during video recording is crucial, as it records the patient–doctor interaction. The experts expressed significant concerns about VIC's vulnerability to tampering or alteration:

'[VIC] might be very prone to tampering of records'. (participant 1)

'I would say there would be privacy issues or privacy concerns because any kind of recording tends to be hijacked or leaked, especially if they are not properly protected'. [emphasis added] (participant 6)

The potential for hacking casts doubt on the authenticity of recordings, leading to scepticism among patients and HCPs alike. Participant 4 mentioned, *"In this time of hacking and all those things, people [patients or court] can always say that this is not an original recording. If written, it is the patient's signature, but in a recording, the patient does not give their signature". [emphasis added]* If individuals cannot trust that a recording has not been manipulated, it undermines the very purpose of IC, which relies on transparency and trust.

Moreover, privacy issues are paramount in this context. The participants opined that patients may feel uneasy about sharing sensitive information in a recorded format, fearing that their personal data could be exposed or misused. Participant 7 stated, *'When we talk about children, specific genders or some issues that may be very sensitive… if there are others who have access to these recordings, they may be a little bit shy'*. This concern is particularly relevant in an era where data breaches are increasingly becoming common. The implications of such breaches can be profound, affecting not only patient trust but also the overall integrity of the healthcare system.

Legal implications

VIC may offer an advantage over traditional written documentation by verifying both patients' consent and understanding of the information presented: *'The recording is more proof than what I [doctor] write. Patients cannot claim that doctors have explained it to them'. [emphasis added] (participant 4)* Unlike a signature on a paper form, which may not fully capture the nuances of a

patient's comprehension, VIC can record the entire interaction, including verbal affirmations and nonverbal cues: *"…video can show that the patient's expression expresses their consent… better to show that the patient has understood the information given". (participant 5)*

This comprehensive documentation can serve as an improved legal safeguard, demonstrating that the patient was not only informed but also engaged in the consent process, as mentioned by participant 6: *'We have evidence that we provide adequate information for the patient. We provide them the opportunity to ask questions'. [emphasis added]* In legal contexts, this can be invaluable, as it provides clear evidence that the patient understood the risks, benefits and alternatives associated with their treatment. Participant 7 said, *"The patients, they cannot refute, they cannot say that he wasn't [informed]". [emphasis added]*

Furthermore, VIC has the potential to resolve disputes regarding the consent process. In cases of disagreement, VIC serves as a reliable source of evidence. The experts perceived that the recorded interaction could clarify what information was shared and how it was communicated:
"If in any medical complications, [patients] look at which part the doctor informed the patient, and we can also acknowledge the patient's reactions – whether the patient is agreeing or not – and probably we can know the degree of understanding of the patient". (participant 10)

While VIC offers some benefits, it also raises important questions regarding the ownership of the recordings, as mentioned by participant 1: *"For ownership of the recording, legally, you need to know who's the owner". [emphasis added]* These concerns can create significant challenges for both patients and HCPs. For instance, if a recording is altered, it could undermine the integrity of the consent process, leading to disputes over what was discussed. This uncertainty may increase the perceived risk of lawsuits, particularly if a patient feels that their consent is not adequately informed: *'If anything goes wrong [with the recording], it increases the risk for them to sue us [doctors]'. [emphasis added] (participant 1)*

Resource constraints

The final theme concerned the limited resources to support the use and implementation of VIC. This theme could be divided into two main categories: human resources and equipment/environment-related resources.

Human resources

VIC requires considerable resources for implementation, in contrast to the traditional written consent. One of the primary challenges is the additional time and effort required from healthcare teams. VIC involves recording details of the IC process, as mentioned by participant 9: *"I'm not sure it's possible to document the whole process, because I think the consent process starts right when you clerk the patient. Starting from the first encounter with the doctor. In medicolegal cases, they don't just concentrate on the consent form, but on the full event from the first patient's arrival. Because it's not just one incident; they need to investigate many encounters". [emphasis added]*

This process may occur not only during the initial consent discussion but also during subsequent recordings at various stages of patient journey, such as clinic visits, pre-operative consultations and post-operative follow-ups:
'Because you need a lot of time. You might need to record it a few times, like outpatient ward pre-operatively, intra-operatively or in the operation theatre. It [VIC] requires recording equipment, space and a quiet room, [so it] might be difficult to set up for immobile patients, and it requires additional servers'. [emphasis added] (participant 1)
'It is a team effort to get written informed consent. VIC will need team effort too'. (participant 2)

The need for multiple recordings can make the process time-consuming. Each stage requires careful planning and execution to ensure that the information conveyed is comprehensive. This may involve coordinating schedules between patients and HCPs and ensuring that the necessary technology is functioning properly.

Moreover, the implementation of VIC may require adjustments in workflow within healthcare facilities. Teams must develop standardised procedures to ensure consistency and quality across all

recordings, which can be a complex undertaking. Eventually, HCPs will need training to effectively conduct and manage these recordings, further adding to the resource demands.

Equipment and environment-related resources

Standardised recording equipment is essential to maintain consistency and quality across all recordings. This includes high-quality cameras, microphones and possibly specialised software for editing and storing videos. Creating a conducive environment for recording is crucial; quiet rooms or designated spaces are needed to minimise distractions and ensure clear audio and video quality, as mentioned by participant 6: *'…because if we want to record, you will need a suitable room with a soundproof environment'*. This can be particularly challenging for immobile patients, especially when the existing environment is too noisy for recording and may require assistance in accessing suitable recording spaces.

VIC may require additional technical personnel to manage the recording equipment and possibly an official videographer to ensure that the process runs smoothly, as stated by participant 3: *'[Doctors need a] technical person [for the] video recording process, a gazetted technical person to assist the doctor to record. Medical record departments will need to be trained to keep and review the video too'. [emphasis added]* Participant 10 also said, *'[Doctors may need] the videographer to record; you [doctor] cannot take it alone'. [emphasis added]*

Another significant requirement is additional servers to securely store the large volumes of video data generated, as mentioned by participant 7: *'The issue would be data storage; video calls consume more data to store them rather than simple paper'*. This not only involves investment in hardware but also necessitates robust data management systems to ensure patient confidentiality and compliance with legal standards.

Discussion

This study's findings highlight the challenges of implementing VIC. While the experts in this study expressed concern that VIC could risk autonomy and privacy, the existing literature shows a strong divergence between hypothetical fears and actual patient experiences. According to Parry et al., while patients often express hypothetical discomfort about being recorded, those who actually participate in video-recorded consultations report high acceptability, feel only slightly or not at all influenced by the camera and rarely feel that the consultation is less confidential.[16] Furthermore, the experts' assertion that VIC provides objective verification of patient comprehension is echoed by Broyles and Tate, who emphasised that video captures the nuanced levels of observation, nonverbal cues and detailed interactions that written records miss, provided that strict, secure data storage practices are established to protect patient confidentiality.[17] Similarly, Pedersen et al. demonstrated that video recordings of clinical consultations allow for a complete, objective analysis of both verbal and nonverbal communication from beginning to end, capturing real-time behaviours without the errors of recall bias.[18] In a similar context, Douglas et al. argued that relying entirely on traditional, contemporaneously written charts is severely limited in complex or time-pressured environments; in contrast, video data provide high-fidelity, objective records that successfully capture multidimensional human interactions and systemic nuances.[19]

A worthwhile matter to discuss is the potential for the Hawthorne effect, where patients and providers may feel compelled to 'act' or present themselves unnaturally due to the awareness of being recorded.[20] This corresponds to the following expert comment: *"Like we are acting, it doesn't appear natural but… we tend to tell everything because we know it is being recorded". (participant 10)* This highlights a possible tension in the use of VIC. Noble et al. suggested that the Hawthorne effect during clinical video observation is typically small and short-lived, as practitioners find it exceedingly difficult to sustain modified, unnatural behaviours within high-pressure, habituated clinical environments.[21] This rapid habituation is further supported by Parry et al., who highlighted the findings by Penner et al. showing that camera-related behaviours in oncology consultations occur infrequently (only 0.1% of the time) and generally only during the first few minutes of an interaction.[16] Additionally, recording technologies do not act solely as an operational barrier; rather, clinicians and patients routinely normalise camera presence by embedding the recording process into standard clinical tasks.[16] Clinically, this suggests that while

initial moments of VIC might feel staged, the interaction quickly normalises, ensuring that the verifiable proof of patients' autonomy remains highly authentic and valuable.

The implementation of VIC necessitates a 'dual consent' process, requiring explicit mutual agreement for both the medical intervention and the video recording itself. This dual consent explicitly fosters respect for autonomy by granting individuals transparent control over their recorded data and the opportunity to review them.[13] However, this additional procedural burden introduces a distinct ethical tension: whether the complexity of obtaining two layers of consent might act as a deterrent to patient participation in care, particularly for vulnerable groups. Broyles and Tate noted that the presence of cameras can cause surprise and wariness among critically ill patients and their families, potentially burdening those with compromised decisional capacity or causing anxiety during intimate care.[17] Similarly, Parry et al. cautioned that in acute or emergency settings, the pressure to consent to recording can compromise a patient's voluntary choice, creating an environment where the vulnerable may feel coerced.[16] To balance the positive obligations of autonomy against the principle of nonmaleficence (avoiding harm or undue distress),[13] clinicians must carefully navigate this dual consent process. If the administrative and technological hurdles of VIC become too overwhelming or intimidating, it risks marginalising vulnerable populations from actively participating in shared decision-making, thereby undermining the core therapeutic alliance the technology is intended to protect.

In Malaysia, under the MMC guidelines, consent is defined as an ongoing communicative process rather than a static administrative signature.[22,23] Existing MMC ethical directives explicitly state that audio and visual recordings of patients form an integral component of the medical record, strictly requiring written IC prior to recording, storing or transmitting such media.[24] From a data governance perspective, audiovisual recordings capture rich biometric features, faces and voices, bringing them under the strict mandate of 'sensitive personal data' within Malaysia's Personal Data Protection Act (PDPA) 2010,[25] which applies to non-governmental institutions. While healthcare providers processing health data must establish robust safeguards under Section 40 of the PDPA 2010, the Act currently presents regulatory nuances regarding its application. Furthermore, under the Private Healthcare Facilities and Services Act 1998 and its 2006 regulations, private clinical facilities are legally mandated to preserve the strict confidentiality and physical security of patient medical records.[26] Storing high-definition video files on cloud networks or local server infrastructure exposes institutions to heightened cyber vulnerability, cyberattacks and unauthorised data breaches, demanding enterprise-grade encryption and standardised access controls that many resource-constrained primary care centres and hospitals currently lack.

Systemically, implementing VIC across Malaysian clinical practice triggers severe operational and resource equity challenges. In busy public health settings, clinicians face excessive patient loads; integrating tablet-based recording workflows, managing file uploads and conducting initial technical checks risk exacerbating administrative burden and clinician burnout. Additionally, the lack of explicit standard operating procedures from key regulatory bodies creates a governance vacuum for clinicians to adopt VIC. Without standardised guidance on data retention timelines, technical recording specifications or formal procedures for revoking video-recorded consent, individual institutions face significant administrative and legal uncertainties during implementation. Without a clear legislative and regulatory framework tailored specifically to VIC, the integration of this technology into Malaysian clinical practice risks being hindered by infrastructural disparities, legal ambiguity and administrative resistance.

A critical distinction must also be made between the implementation of VIC strictly as a clinical documentation tool and its potential use as a research or educational instrument. One expert noted, *'We can also learn how to improve our skills by reflecting on this recording' (participant 6)*, highlighting the potential of video recording to be used as a tool for a dynamic educational experience that benefits both HCPs and patients.

If these recordings are used for research, such as observational studies of patient–provider interactions, or for medical education, such as reflective training to improve HCPs' communication skills, the ethical landscape shifts significantly.[21] Broyles and Tate and Parry et al.

emphasised that using video data for research or training introduces greater risks of participant recognition and requires a 'graduated' or tiered consent model, where patients must explicitly authorise exactly who will access the footage and for what specific secondary purposes, such as academic publications or training modules.[16,17] Failing to separate these purposes in clinical practice could overwhelm patients with unnecessary anxieties regarding broader dissemination and privacy, thereby complicating the primary goal of securing verifiable clinical consent. Therefore, it is imperative that institutions establish clear, purpose-specific guidelines to ensure that the rigorous ethical and regulatory safeguards required for research and education do not inadvertently encumber the routine clinical documentation process.

Study limitations

While this study offers valuable insights , several limitations must be acknowledged. First, because VIC is not yet an established practice, this study relied entirely on the use of hypothetical scenarios during data collection. Additionally, while the hypothetical vignettes were grounded in the literature and refined through informal preliminary testing with two experts, they did not undergo a formal, multistage pilot validation process prior to implementation.

Consequently, the findings reflect the anticipated apprehensions, perceived opportunities and conceptual projections of the interviewed experts rather than empirical data derived from real-world experiences.

Second, the sample size was limited. Although the cohort captured essential multidisciplinary insights by including HCPs, legal experts and regulatory stakeholders, the small sample size limits the generalisability of the findings across the Malaysian medical and legal sectors. In particular, the legal cohort and certain medical sub-specialties were underrepresented, which may limit the diversity of legal interpretations and clinical perspectives captured.

Finally, this study focused exclusively on the perspectives of professional experts. Because patients and their family members were not interviewed, the study lacks direct empirical data regarding the consumer side of the therapeutic alliance. Factors such as public digital literacy, cultural privacy norms and patient-specific anxieties regarding video recording in public healthcare institutions remain critical dimensions that require dedicated investigation in future research.

Conclusion

This study provides a critical, multi-expert evaluation of the ethical, legal and operational dimensions of integrating VIC into the Malaysian healthcare landscape. This technological robustness may support systemic solutions to the escalating financial and institutional burdens of medical negligence litigation in Malaysia, where a substantial proportion of malpractice disputes stems from perceived communication failures and deficient consent documentation.[4,5] Moving forward, healthcare decision-makers and researchers must explore public and patient perceptions of this technology alongside investigating deeper healthcare providers' insights. Achieving a sustainable integration requires striking a precise balance between mitigating digital ethical risks and harnessing technology to elevate patient-centred care. As frontline gatekeepers, HCPs must recognise that video recording technology is not merely a technical upgrade but a complex intervention with profound ethical, legal and operational trade-offs.

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Author contributions

HZA, AA and NHMA led the conceptualisation, methodology and investigation, while HZA, WAA and MFMM spearheaded data curation, formal analysis and validation. HZA, AA and WAA prepared the original draft, and all authors contributed to writing, review and editing.

Ethical approval

Approval was granted by the Research and Ethics Committee, Universiti Sains Islam Malaysia, on 27 April 2022 (Ref: USIM/JKEP/2022-207) and the Medical Research & Ethics Committee, Ministry of Health, on 3 August 2022 (Ref: 22-01133-ECE).

Conflicts of interest

The authors have no conflicts of interest to declare.

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Data sharing statement

The qualitative data supporting the findings of this study are not publicly available due to ethical and privacy restrictions concerning the confidentiality of the interviewed medical and legal experts. However, anonymised transcripts and the interview protocol are available from the corresponding author upon reasonable request.

How does this paper make a difference in general practice?

- **Identifies the operational friction of dual consent:** It highlights the challenges general practitioners face when balancing a 'dual consent' model (consenting to both the medical procedure and the recording), particularly when managing vulnerable or critically ill patients.
- **Mitigates concerns regarding the Hawthorne effect:** The research reassures frontline clinicians that camera-induced behavioural modifications are short-lived, allowing for an authentic preservation of the therapeutic alliance.
- **Informs future clinical practice policy:** This research offers immediate, actionable insights for healthcare policymakers to develop secure, purpose-specific data infrastructure and ethical guidelines tailored to the pace of general practice.

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Interview Study Protocol (V2, 15th March 2022)

Theme / topic	Example of questions
1) Current practice of using written process of informed consent (IC) in medical practice.	• Would you share your experience regarding current practice of written IC in physician-patient interactions? • What are the challenges you face regarding written IC in medical practice? • What are the challenges to practice ethically and legally binding informed consent? • What are the implications of a poorly handled IC process to patients, physicians, stakeholders, and society? • How can the process of written IC can be improved?
Before we begin the questions, I am going to read a few brief hypothetical scenarios. Because video-recorded informed consent (VIC) is not yet standard practice in Malaysia, these scenarios will help ground our discussion on how this technology might actually look in a clinical or legal setting. Example of scenarios: • The Routine Clinic Scenario A medical officer in a busy in health clinic needs to perform a minor surgical procedure, e.g. toilet and suturing. Instead of signing a paper form, the doctor uses a hospital-issued tablet to record the consultation. The doctor verbally explains the risks, and the patient verbally agrees on camera. The video is then uploaded to the hospital's electronic health record system. • The Malpractice Dispute: A patient suffers a known complication from a procedure and files a medical negligence claim, stating the doctor never warned them of this specific risk. The doctor produces the video-recorded consent as evidence. The video clearly captures the doctor stating the risk, but the patient's face is partially out of frame, and the audio is slightly muffled due to clinic background noise.	
2) Application of video recorded IC (VIC) in medical practice.	• In your opinion, how current technology can improve the practice of medical documentation and informed consent? • Please elaborate regarding the differences in terms of interaction between a video recorded and written documentation. • How recorded IC, either an audio or video recorded IC is a method that is feasible to be done in medical practice? • How will VIC affect patients' management of care? • In what way VIC would be able to replace written IC?
3) Requirement of VIC in medical practice.	• As an expert in your field (Ethics) - What are the criteria of valid VIC in medical practice? - What are the anticipated ethical challenges in VIC? • As an expert in your field (Legal) - What are the criteria of valid VIC in medical practice ? - How should VIC be regulated/governed in Malaysian medical practice? • As an expert in your field (technical) - What are the criteria of valid VIC in medical practice? - How to ensure the feasible of the recording process and the recording records to be kept safe?