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Legal and Ethical Dilemmas in Emergency Referral Video Recording: A Systematic Literature Review

Nelli Nur Indah Sari^{1*}, Ahmad Ma'mun Fikri¹

¹ Department of Law, Faculty of Law, Universitas Islam Nusantara, Bandung, Indonesia

* Corresponding author: Nelli Nur Indah Sari (punyanellinih@email.com)

Abstract

Video recording in emergency referrals is expanding through telemedicine but raises ethical, legal, and patient safety concerns. This study aims to systematically analyze the ethical and legal dilemmas of utilizing clinical video in emergency referral services, as well as its impact on patient safety and the referral administration process. This research employs a Systematic Literature Review method guided by the PRISMA 2020 framework. The literature search covered PubMed, Scopus, ScienceDirect, and Google Scholar using the keywords “emergency referral,” “video recording,” “telemedicine,” “ethical issues,” and “legal aspects.” A total of 14 articles were analyzed using thematic synthesis. The results indicate that clinical video expedites communication and supports triage in emergency referral systems. However, the study identified ethical dilemmas related to informed consent and patient privacy, legal regulatory gaps, and negative impacts in the form of delayed referrals, patient refusals, and increased administrative burdens. On the other hand, video can also enhance the efficiency of clinical communication if implemented with appropriate standards. These findings imply the need for clear regulations, standardized procedures, and safeguards to balance administrative efficiency with patient safety and rights.

Keywords

Emergency Referral, Ethical Dilemma, Legal Aspects, Patient Safety, Telemedicine, Video Recording.

1. Introduction

Emergency services are a critical component of healthcare systems that require rapid decision-making, accurate assessment, and effective coordination between healthcare facilities. The referral system from primary healthcare facilities (*Fasilitas Kesehatan Tingkat Pertama/FKTP*), including Community Health Centers (*Pusat Kesehatan Masyarakat/Puskesmas*) and clinics, to hospitals aims to ensure continuity of care and appropriate treatment based on patients' clinical conditions. In emergencies, delays in referral may increase morbidity and mortality risks, as time-sensitive care requires prompt intervention and every delay may affect clinical outcomes (World Health Organization, 2021). An inefficient referral process may also increase the burden on healthcare facilities and reduce the overall effectiveness of care delivery (Reynolds et al., 2017).

The development of digital healthcare has introduced clinical video to support communication, remote assessment, documentation, and information exchange between healthcare facilities (Kruse et al., 2017; Hayden et al., 2021). However, its use raises concerns regarding patient privacy, data security, and ethical management of medical information, particularly in emergency referrals where decisions are time-sensitive and consent may be limited (Morley et al., 2020; Khalemsky et al., 2022). Clinical video may also function as an administrative prerequisite for referral, allowing hospitals to assess patient conditions and referral suitability (Greenhalgh et al., 2020; Whitelaw et al., 2020). While this can improve clinical information and reduce communication errors, mandatory video requirements may create tension between administrative procedures and patient safety.

This issue is particularly evident in referral practices in the Tuban and Bojonegoro regions, where six emergency referral hospitals serving local FKTPs require healthcare workers to submit clinical videos before processing referrals. Reportedly, referring healthcare workers may wait approximately 1–4 hours for a hospital response while patients require immediate intervention. These delays conflict with the principle that patient safety should remain the highest priority in emergency care (Darraj et al., 2023). Moreover, video submission does not necessarily result in patient acceptance, as patients may instead be rejected or redirected to other facilities, creating additional uncertainty and administrative burdens. Delays in definitive treatment can worsen clinical conditions and increase the risk of complications and death, while healthcare technology should facilitate, not obstruct, timely care (Kruse et al., 2017). Thus, technology-driven referral procedures must remain oriented toward patient safety (Iyengar et al., 2020).

The practice also presents significant ethical dilemmas. Clinical video involves sensitive medical information and therefore raises concerns regarding privacy, confidentiality, informed consent, and the use of medical records (Morley et al., 2020). In emergencies, patients may be unconscious or otherwise unable to provide informed consent, creating tension with the principle of autonomy (Khalemsky et al., 2022). At the same time, healthcare professionals must uphold beneficence by acting in the patient's best interests and non-maleficence by avoiding preventable harm, including harm caused by referral delays (Beauchamp & Childress, 2021).

Legally, the use of clinical video in emergency referrals also remains insufficiently defined. Digital patient information is closely connected to medical confidentiality and personal data protection, while telemedicine raises broader questions concerning professional liability, data security, and regulatory responsibility (Kruse et al., 2017). The absence of clear and comprehensive rules may create uncertainty regarding who bears responsibility when video-based referral decisions contribute to delayed treatment or adverse outcomes.

Although previous studies have examined ethical, legal, and safety issues in telemedicine, most address telemedicine broadly rather than the specific use of

clinical video as a prerequisite for emergency referral (Kruse et al., 2017), moreover, limited research simultaneously integrates ethical dilemmas, legal uncertainty, patient safety, and administrative interests within a single analytical framework (Morley et al., 2020).

A distinct research gap remains in the systematic examination of clinical video as a prerequisite for emergency referral approval, particularly regarding delayed referral decisions and uncertainty surrounding hospital patient acceptance. This study addresses this gap by contextualizing the issue in Tuban and surrounding areas, where hospitals request clinical videos before accepting referred patients. Its novelty lies in integrating ethical, legal, patient safety, and administrative perspectives with practical issues such as 1–4-hour referral delays, admission uncertainty, and administrative pressure on primary healthcare facilities. Accordingly, this study aims to analyze the ethical and legal dilemmas associated with clinical video in emergency referral services and examine its implications for patient safety and the referral administration process.

2. Literature Review

2.1. Clinical Video in Emergency Referral and Telemedicine

Telemedicine has increasingly become an important component of emergency healthcare by enabling real-time communication between healthcare professionals across different facilities. Clinical video allows referring providers to transmit visual information about a patient's condition, support remote assessment, facilitate triage, and obtain specialist input before or during referral. Its application is particularly relevant when geographical distance, limited specialist availability, or hospital capacity affects conventional referral processes. Benziger et al. (2021) found that telemedicine in emergency departments can improve access to clinical expertise and patient care, with real-time video conferencing identified as one of the most feasible technologies. However, implementation remains dependent on technical infrastructure, workflow integration, and organizational readiness.

The role of clinical video extends beyond clinical communication because it can also support referral coordination and healthcare resource management. Video-based assessment may provide receiving hospitals with additional information for determining patient urgency, appropriate destination, and service readiness. Nevertheless, its effectiveness depends on whether technology functions as a supporting clinical instrument or becomes an administrative prerequisite for referral. When video submission is required before a hospital responds, the process may add waiting time and conflict with the time-sensitive nature of emergency care. Therefore, clinical video should complement, rather than replace, direct clinical judgment and immediate intervention, particularly when a patient requires urgent treatment. Mann et al. (2020) emphasized that telehealth can strengthen emergency care while requiring appropriate integration into existing clinical workflows.

2.2. Ethical and Legal Dilemmas in Clinical Video Use

The use of clinical video introduces ethical concerns because emergency referral involves the collection, transmission, and potential storage of highly sensitive health information. The central issues include patient privacy, confidentiality, informed consent, autonomy, and the responsible handling of digital medical data. These concerns become more complex in emergencies because patients may be unconscious, confused, or otherwise unable to provide explicit consent before their condition is documented and transmitted. Keenan et al. (2021) identified autonomy, non-maleficence, beneficence, justice, and the professional–patient relationship as key ethical principles to consider in telehealth practice. Their systematic review also highlighted limited evidence on how ethical principles translate into telehealth practice.

From a legal perspective, clinical video creates questions concerning professional responsibility, data protection, confidentiality, and liability when decisions are made using remotely transmitted information. Regulatory uncertainty may become particularly problematic when responsibility is shared between the referring facility, receiving hospital, healthcare professionals, and digital systems. Nittari et al. (2020) identified data protection, confidentiality, informed consent, professional malpractice, and legal liability as major medico-legal challenges in telemedicine. These issues indicate that clinical video cannot be treated solely as a technological tool because its use directly affects patients' rights and professional accountability. Accordingly, clear rules are needed regarding consent exceptions in emergencies, authorized access, data storage, transmission security, documentation, and liability for decisions based on video information.

2.3. Clinical Video, Patient Safety, and Referral Efficiency

Clinical video can support patient safety by improving the availability and timeliness of clinical information during emergency referrals. Through real-time visual communication, referring healthcare professionals can describe the patient's condition more accurately, while receiving clinicians can assess urgency and prepare appropriate resources before the patient arrives. This process can strengthen coordination, support triage, and facilitate more informed referral decisions. Evidence from emergency telemedicine literature indicates that real-time video conferencing is among the most feasible modalities for emergency care and can improve access to clinical expertise and patient management. However, its effectiveness depends on adequate infrastructure, technical reliability, and integration into established clinical workflows. Sharifi Kia et al. (2023) reported that telemedicine can improve emergency patient care, although implementation challenges may impede service delivery and potentially affect patient safety.

Referral efficiency also depends on how telemedicine is integrated into emergency care processes. Video-based consultation can enable faster communication, improve coordination between facilities, and support decisions about transfer, admission, or alternative management. In rural and remote emergency settings, telehealth has been associated with improvements or equivalent outcomes in clinical effectiveness, care processes, and, in some contexts, speed of care. However, patient acuity remains an important determinant because emergency conditions require particularly rapid decisions regarding transfer and treatment. Tsou et al. (2021) emphasized that the effectiveness of emergency telehealth should be assessed through multiple outcomes, including clinical effectiveness, care processes, speed of care, patient disposition, and service utilization.

3. Methods

This study employed a Systematic Literature Review (SLR) to identify, evaluate, and synthesize scientific evidence concerning the ethical and legal dilemmas of video recording in emergency referral services. The SLR approach was selected because it enables a structured and comprehensive synthesis of relevant evidence while minimizing selection bias in the identification and selection of studies (Page et al., 2021). The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency, consistency, and replicability throughout the review process.

The literature search was conducted through four major scientific databases: PubMed, Scopus, ScienceDirect, and Google Scholar. The search strategy used combinations of keywords related to emergency referral, video recording, clinical video, telemedicine, patient safety, digital health, ethics, legal issues, healthcare communication, and administrative delays. In PubMed, the search strategy included ("emergency referral" AND "video recording") OR ("telemedicine" AND "clinical

communication" AND "patient safety") OR ("digital health" AND "ethics" AND "legal issues"). Scopus used ("clinical video" AND "emergency care") OR ("healthcare referral system" AND "administrative delay") OR ("telemedicine" AND "ethical issues" AND "legal framework"). ScienceDirect used ("video consultation" AND "emergency referral") OR ("digital documentation" AND "patient safety") OR ("healthcare communication" AND "ethical dilemma"). Google Scholar used broader combinations, including "emergency referral system video," "clinical video ethics healthcare," "telemedicine legal patient data," and "administrative delay referral hospital." The search was limited to publications from 2021 to 2026 to capture recent developments in digital health, telemedicine, and technology-based healthcare referral systems (World Health Organization, 2021).

The inclusion criteria comprised research articles, reviews, and health policy publications published between 2020 and 2026 in English or Indonesian. Eligible studies addressed telemedicine, clinical video, or digital communication in healthcare and discussed at least one relevant dimension: ethical issues, legal aspects, patient safety, or referral processes. Studies focusing on emergency services, referral systems, or digital healthcare applications were prioritized. The exclusion criteria included opinion articles or publications without a clear research methodology, studies unrelated to healthcare services, duplicate publications, and articles without full-text access.

Study selection followed the PRISMA 2020 framework through four stages: identification, screening, eligibility, and final inclusion (Page et al., 2021). During identification, records were collected from the selected databases and duplicates were removed. Titles and abstracts were then screened for relevance to the research objectives. Potentially relevant articles were then examined through full-text assessment based on the predetermined criteria. Studies meeting all requirements were included in the final synthesis, and the selection process was presented in a PRISMA flow diagram to ensure transparency and accountability.

Data from eligible studies were extracted using a standardized table containing author and year, country, study design, setting, study focus, video/telemedicine use, ethical aspects, legal aspects, patient safety impacts, and main findings. Particular attention was given to informed consent, privacy, data protection, professional liability, referral delays, patient rejection or redirection, administrative burdens, and the contribution of video to clinical communication and triage. The extracted evidence was then analyzed through thematic synthesis to identify recurring patterns and relationships concerning the ethical, legal, patient safety, and administrative implications of clinical video use in emergency referral systems.

4. Results

4.1. Data Analysis and Literature Selection

The data were analyzed using thematic synthesis, which identifies recurring patterns across studies and organizes them into themes aligned with the research objectives. The analysis focused on four themes: clinical video implementation in emergency referrals, ethical dilemmas, legal regulation and patient data protection, and patient safety impacts, particularly referral delays. This approach enabled an integrated narrative synthesis across studies with different contexts (Thomas & Harden, 2008).

The literature search was conducted in PubMed, Scopus, ScienceDirect, and Google Scholar, initially identifying 286 articles (PubMed = 28, Scopus = 141, ScienceDirect = 22, Google Scholar = 95). After removing 186 duplicates, 100 articles remained. Title and abstract screening excluded 72 articles, leaving 28 for full-text assessment. Subsequently, 14 articles were excluded due to no clinical referral video use ($n = 5$), no explicit ethical/legal discussion ($n = 4$), irrelevant

emergency referral data ($n = 3$), or reviews/editorials without empirical data ($n = 2$). Finally, 14 articles met the inclusion criteria and were included in the SLR analysis.

Table 1. Study Characteristics

No.	Author (Year)	Country	Study Design	Setting	Main Focus
1	Libreros-Peña et al. (2023)	Colombia	Implementation study	Referral hospital	Video telemedicine in emergency referral
2	Wong and Cheng (2022)	Hong Kong	Qualitative study	Primary care facility	Perceptions of video use in telemedicine
3	Solimini et al. (2021)	Italy	Narrative review	Global telemedicine	Ethics and law of telemedicine
4	Jaffe et al. (2021)	USA	Rapid review	Emergency telehealth	Patient safety in video telehealth
5	Durdova et al. (2026)	Czech Republic	Analytical study	Tele-emergency system	AI + video in triage
6	Baniasadi et al. (2026)	Global	Operational study	Emergency department	Optimizing patient flow with video triage
7	Hayden et al. (2021)	USA	Consensus guideline	Emergency care system	Telehealth framework
8	Cortellaro et al. (2025)	Italy	Observational study	Pre-hospital EMS	Video EMS triage
9	Rosen et al. (2024)	USA	Rapid review	Emergency telehealth	Risks of video-based telehealth
10	Sharifi Kia et al. (2023)	Tunisia	System study	Tele-emergency	Implementation of video triage
11	Bolcato et al. (2024)	Italy	Legal analysis	Global telemedicine	Telemedicine legal regulation
12	Nittari et al. (2020)	Italy	Narrative review	Telemedicine	Telemedicine ethics
13	Sykora et al. (2020)	Czech Republic	Emerging technology study	AI tele-emergency	AI + video decision system
14	Harrison and Manias (2022)	Australia	Review	Virtual healthcare	Patient safety risks in telehealth

Based on Table 1, the 14 articles analyzed in this SLR come from various countries and use diverse study designs, including qualitative studies, observational studies, clinical implementations, reviews, guidelines, and legal analyses. All studies focus on the use of video in telemedicine for emergency referral systems, particularly in the triage process and inter-facility consultations. Generally, the main themes identified include ethical aspects (informed consent and patient privacy), legal aspects (regulatory ambiguity and liability), and patient safety (referral delays, limited clinical decision-making, and risks of patient rejection). These results indicate that while video use can enhance clinical communication, significant implementation challenges remain in implementation, especially around regulatory and patient safety.

Table 2. Thematic Extraction Results

Author	Study Focus	Video/Telemedicine Use	Ethical Aspects	Legal Aspects	Patient Safety Impact	Main Findings
Liberos-Peña et al. (2023)	Emergency telemedicine and referral	Real-time video consultation before referral	Consent, privacy, unconscious patients	Unclear video regulation and liability	Faster consultation, but referral may remain delayed	Improves access but capacity barriers persist
Wong and Cheng (2022)	HCP telemedicine perceptions	Video consultation; SOP inconsistencies	Privacy and informed consent	Limited referral-specific rules	Miscommunication may delay decisions	Clearer regulations and SOPs are needed
Solimini et al. (2021)	Global telemedicine ethics and law	Video teleconsultation	Confidentiality, autonomy, consent, data security	No uniform international standards	Misdiagnosis risk from limited examination	Ethical and legal readiness lags behind telemedicine growth
Jaffe et al. (2021)	Telehealth patient safety	Video emergency consultation and monitoring	Privacy and digital consent	Uneven regional protection	Delayed diagnosis and miscommunication	Access improves, but safety trade-offs remain
Durdoval et al. (2026)	AI in emergency decisions	Video-based AI triage and referral	Algorithmic decision uncertainty	Unclear AI liability	Bias and delayed treatment risks	AI improves efficiency but increases complexity
Baniyadi et al. (2026)	Telemedicine and emergency flow	Video-based triage before referral	Fairness in prioritization	No global teletriage standard	Redirection may cause delays	Improves triage efficiency but may delay referral
Hayden et al. (2021)	Emergency telehealth framework	Video as clinical communication	Patient-centered care and informed decisions	Evolving, non-uniform regulations	Variable clinical outcomes	Patient safety should remain the priority
Cortellaro et al. (2025)	EMS telemedicine referral	Video pre-hospital triage	Fairness in visual-based selection	Unstable EMS telemedicine	70% screened without	Reduces unnecessary

Author	Study Focus	Video/Telemedicine Use	Ethical Aspects	Legal Aspects	Patient Safety Impact	Main Findings
				clinical rules	direct referral	hospital referrals
Rosen et al. (2024)	Emergency telehealth risks	Video for initial diagnosis	Privacy and digital consent	Regional regulatory variation	Delayed diagnosis and clinical limitations	Improves access but may reduce diagnostic accuracy
Sharifi Kia et al. (2023)	Tele-emergency implementation	Video triage for digital referral	Engagement and fairness	Limited legal framework	Improves referral flow	Feasible but requires long-term evaluation
Bolcato et al. (2024)	Global telemedicine regulation	Video as clinical communication	Consent and privacy	No uniform global regulation	High liability risk from errors	Significant regulatory gaps remain
Nittari et al. (2020)	Telemedicine ethics	Video remote consultation	Consent, privacy, autonomy	Data protection concerns	Risks from inaccurate data	Telemedicine ethics remain developing
Sykora et al. (2020)	AI-assisted tele-emergency	Video + AI for triage	Uncertainty in automated decisions	Unclear AI liability	Bias and delayed decisions	AI complicates emergency decision-making
Harrison and Manis (2022)	Telehealth safety	Video emergency monitoring	Privacy and digital consent	Non-uniform regulations	Delayed diagnosis and limited observation	Effective but carries safety risks

As shown in Table 2, the synthesis of 14 articles indicates that clinical video supports emergency triage and inter-facility consultation by improving communication and referral decisions. However, ethical concerns persist regarding informed consent, patient privacy, and the inappropriate use of clinical recordings, with inconsistent ethical standards for emergency video use (Nittari et al., 2020; Wong & Cheng, 2022). Legal gaps also remain concerning specific regulations and the distribution of medical liability between referring and receiving facilities (Solimini et al., 2021; Durdova et al., 2026). From a patient safety perspective, video may facilitate faster communication and triage but can also contribute to referral delays, patient rejection, and delayed treatment when visual information is limited (Jaffe et al., 2021; Rosen et al., 2024).

The literature predominantly examines video in general telemedicine, hospital consultation, and pre-hospital triage, particularly in developed countries (Libreros-Peña et al., 2023; Cortellaro et al., 2025). Research on clinical video as an administrative prerequisite for emergency referrals from primary healthcare

facilities to hospitals remains limited, particularly in resource-constrained and developing-country contexts. Previous studies also rarely integrate ethical, legal, and patient safety dimensions, especially regarding referral delays and patient rejection (Solimini et al., 2021; Jaffe et al., 2021). This study therefore integrates these dimensions to provide a more comprehensive understanding of clinical video use in emergency referral services.

4.2. The Practice of Video Recording in Emergency Referral Systems

The synthesis results indicate that the practice of video recording in emergency referral systems is utilized as a clinical communication tool between primary FKTP and referral hospitals. Clinicians generally use videos to convey a patient's condition in real time, including level of consciousness, breathing patterns, bleeding, and trauma, before the hospital makes a referral decision (Libreros-Peña et al., 2023; Cortellaro et al., 2025). This phenomenon aligns with the evolution of telemedicine, which positions video technology as an "extended clinical eye," broadening clinical observation without the physical presence of a specialist. The WHO emphasizes that video-based telemedicine can improve access to emergency services, particularly in regions with limited medical resources and an unequal distribution of specialists (World Health Organization, 2022).

Beyond serving as a medical communication tool, in some systems, video has become part of the referral administrative process, where hospitals mandate it as an informal prerequisite before accepting a patient. This indicates a shift in video's function from a clinical aid to a patient-selection instrument within the referral system (Banasadi et al., 2026). This transformation can be explained through the concept of digital gatekeeping, a condition where digital technology is used as a screening mechanism for healthcare access rather than solely as a clinical tool (Greenhalgh et al., 2020). This condition also highlights a shift in the relationship between FKTP and hospitals, where referral decisions are no longer based solely on the patient's clinical condition but also rely on the digital visual interpretation sent beforehand. In this context, video is no longer neutral; it becomes intertwined with simultaneous administrative and clinical decision-making processes.

Phenomena observed in the field, including in the Tuban region, show that video requests are often required before a referral decision is made, even in emergencies. This practice can be linked to the concept of a defensive triage system, where receiving facilities attempt to minimize the risk of patient overload by conducting additional screening prior to accepting referrals. Nevertheless, the implementation of this practice remains unstandardized both nationally and internationally. The absence of standardized operational guidelines means that video usage heavily depends on the policies of individual hospitals and the communication between healthcare workers. This aligns with findings that the adoption of telemedicine adoption often outpaces the development of regulations and operational standards, creating an implementation gap (Bashshur et al., 2020). This imbalance between technological advancement and regulation potentially leads to significant practice variations among healthcare facilities, which can ultimately affect the consistency of emergency care. Therefore, video use of video in referral systems must be positioned not only as a technological innovation but also as a component of healthcare governance that requires clear ethical, clinical, and administrative standards.

4.3. Ethical Implications of Clinical Video Use for Patients

From an ethical standpoint, the use of video in emergency referrals raises several major dilemmas, particularly concerning fundamental bioethical principles such as autonomy, beneficence, non-maleficence, and justice. The most dominant issue is informed consent, where emergency conditions often make it impossible to obtain patient consent before recording, especially for unconscious or critically ill patients

(Nittari et al., 2020). This creates a conflict between the principle of patient autonomy and the need for rapid medical intervention.

Furthermore, clinical videos pose a significant risk to patient privacy and data confidentiality, as they can clearly display a patient's identity, physical condition, and highly sensitive clinical environments. This risk escalates when the transmission occurs through digital platforms that are not fully encrypted or lack strict health data security standards (Solimini et al., 2021). The WHO also emphasizes that patient data protection in telemedicine is a vital component in maintaining public trust in digital healthcare services (World Health Organization, 2022). Several studies also indicate that the lack of uniform ethical standards for the use, storage, and distribution of clinical videos leads to wide variations in practice among healthcare facilities (Wong & Cheng, 2022). In this context, video recordings could potentially be used outside their initial clinical purpose, posing additional ethical risks such as data misuse or breaches of professional confidentiality.

Moreover, the advancement of digital technology in healthcare has introduced the concept of digital vulnerability, the increased ethical risk resulting from the use of patient visual data within complex, interconnected digital systems (Herzog et al., 2022). This reinforces that ethical issues relate not only to the act of recording but also encompass the entire data lifecycle, from capture and transmission to storage. In emergency contexts, ethical dilemmas become increasingly complex as healthcare workers must balance the speed of saving a patient (beneficence) with the protection of patient rights (autonomy and privacy). This tension creates an ethical trade-off situation that currently lacks uniform operational standards in modern clinical practice. Consequently, specific ethical guidelines governing video use in emergency referrals are necessary to prevent violations of medical ethics amidst urgent clinical needs.

4.4. Legal Aspects of Video Use in Healthcare Services

From a legal perspective, SLR results indicate that, to date, no specific regulations govern the use of clinical video in emergency referral processes. This ambiguity creates a regulatory gap, particularly regarding the legal status of the video, whether it can be categorized as part of the electronic medical record or merely as an informal communication tool in the referral process (Solimini et al., 2021). This condition demonstrates that the development of telemedicine technology is advancing faster than the formulation of its governing legal frameworks.

In the context of health law, digital medical records must fundamentally meet requirements of legality, security, and accountability. However, the use of clinical video as part of the referral decision-making process lacks clear standards regarding legal validity, data integrity, and the digital chain of custody. The WHO stresses that digital transformation in healthcare must be accompanied by strengthened regulations to ensure the protection of patients and healthcare workers within the digital system (World Health Organization, 2022).

Additionally, the absence of clear legal standards causes uncertainty in medical liability, particularly when patient rejection, referral delays, or clinical decision errors occur after a video has been sent. In such situations, it remains unclear whether the legal liability lies with the FKTP as the sender, the hospital as the receiver, or the referral system as a whole (Durdova et al., 2026). This ambiguity can increase litigation risk and drive defensive medicine in clinical practice.

This phenomenon can also be understood through the concept of legal lag in digital health, a condition where health technology innovations develop faster than the legal system's capacity to regulate them (Lupton, 2017). Consequently, healthcare workers are placed in a legally vulnerable position, having to make technology-based decisions that lack a strong regulatory foundation. Furthermore, several studies suggest that the use of patient visual data in telemedicine is also tied to issues of data governance and liability overlap, where the boundary between

clinical responsibility and system responsibility becomes blurred (Hutchings et al., 2020). This reinforces that legal challenges in video usage are not solely national issues but are global challenges in the era of digital health.

4.5. Impact on Patient Safety and the Referral Administration Process

From a patient safety perspective, video use of video in emergency referral systems has a double-edged effect. On one hand, video can enhance clinical communication speed, accelerate the triage process, and assist doctors at referral hospitals in understanding the patient's condition prior to arrival. This aligns with telemedicine advancements showing that the use of visual media can improve the accuracy of initial assessments in emergency care (Jaffe et al., 2021; World Health Organization, 2022).

However, SLR findings also reveal significant negative impacts on the timeliness of care, specifically in the form of delayed referral decisions (delays of 1–4 hours), patient rejection by hospitals, and uncertainty regarding patient admission. This condition is highly critical in emergency contexts, as any delay in accessing definitive care can elevate the risk of patient morbidity and mortality (Rosen et al., 2024). In emergency medicine literature, waiting time in the referral system is a primary indicator of patient safety quality. Moreover, this phenomenon indicates that video use does not always expedite service flow; in some situations, it creates a new bottleneck in the referral system: an additional video-based evaluation before an admission decision is made. This shifts the paradigm of emergency referral from an urgency-based system to a visual screening-based system.

Beyond clinical impacts, this practice also imposes an additional administrative burden on primary facilities. Healthcare workers must not only perform initial patient stabilization but also handle video documentation, transmit data, conduct repetitive communication with the hospital, and wait for referral decisions. In some cases, this process prolongs the patient's waiting time for definitive care and increases the workload of frontline healthcare workers. This phenomenon can be explained by the concept of administrative burden in digital health, where digital innovations increase healthcare bureaucratic complexity rather than simplifying it (Moynihan et al., 2015). In this context, clinical video becomes not only a clinical tool but also part of the administrative process determining patient admission flow. A structural conflict exists between the hospital's administrative interest in conducting video-based patient selection and the fundamental principle of patient safety, which demands rapid response without bureaucratic hurdles. This conflict becomes increasingly apparent in field practice, including in the Tuban region, where the referral process is frequently delayed by video-based evaluations before a final decision is made. Thus, while the use of video can improve clinical communication, its implementation in emergency referral systems must be strictly regulated to avoid disrupting the core principles of emergency care: speed, accuracy, and patient safety.

5. Discussion

The findings of this systematic literature review indicate that clinical video has become an important component of emergency telemedicine, particularly for real-time communication, preliminary triage, and consultation between primary healthcare facilities and referral hospitals. Across the 14 studies, video generally improved the availability and completeness of clinical information before a patient arrives at the receiving facility. This finding is consistent with Libreros-Peña et al. (2023), who reported that telemedicine consultation can support emergency patient assessment, and with Sharifi Kia et al. (2023), who demonstrated the feasibility of tele-emergency systems in improving patient flow. Baniyadi et al. (2026) similarly showed that telemedicine-based triage can improve the efficiency of emergency department processes. These findings suggest that video has substantial clinical

value when used to complement, rather than replace, professional assessment. However, the present study identifies an important distinction: when video becomes a prerequisite for referral acceptance, its function may shift from clinical communication toward administrative gatekeeping.

The ethical findings demonstrate that this practice creates tensions between the principles of autonomy, beneficence, non-maleficence, and justice. The most prominent concerns involve informed consent, privacy, confidentiality, and the appropriate use of patient recordings. These findings support Nittari et al. (2020), who identified informed consent and privacy as major ethical challenges in telemedicine, and Solimini et al. (2021), who emphasized the ethical risks associated with digital patient information. Wong and Cheng (2022) further found that unclear procedures contribute to inconsistent ethical practices among healthcare providers. In emergency situations, however, obtaining consent before recording may be difficult when patients are unconscious or critically ill. Therefore, the ethical problem is not simply whether video recording is permissible, but whether its use is proportionate to the patient's immediate clinical needs and whether adequate safeguards exist throughout the data lifecycle.

The legal findings similarly reveal substantial regulatory uncertainty. The reviewed studies indicate limited specific guidance concerning the legal status of clinical video, data ownership, storage, transmission, and liability when referral decisions lead to rejection or delay. This finding is consistent with Solimini et al. (2021), who identified regulatory gaps in telemedicine, and Hutchings et al. (2020), who emphasized the importance of clear data governance and accountability in digital health systems. The absence of clearly defined responsibilities between referring and receiving facilities may create legal vulnerability for healthcare workers and institutions. Consequently, clinical video should be incorporated into a clearly defined governance framework covering documentation standards, access, retention, confidentiality, and professional liability.

From a patient safety perspective, the findings demonstrate a double-edged effect. Video can speed communication and support triage, but mandatory video-based evaluation may add waiting time, referral uncertainty, and patient rejection. This finding aligns with Jaffe et al. (2021) and Rosen et al. (2024), who identified delayed diagnosis, communication limitations, and incomplete clinical assessment as key telehealth risks. Burgess et al. (2022) further emphasized that delays in emergency care can increase adverse patient outcomes. The additional workload experienced by primary healthcare workers also corresponds with Moynihan et al. (2015), who explained that digital procedures can generate administrative burdens. Thus, the central issue is not the use of video itself, but its implementation as a mandatory administrative gatekeeping mechanism. Video should therefore remain a supporting clinical tool, while emergency referrals should prioritize clinical urgency, rapid stabilization, and patient safety over administrative screening.

6. Conclusion

This study concludes that clinical video recording in emergency referral systems offers important benefits for strengthening communication, preliminary triage, and information exchange between FKTP and referral hospitals. However, its implementation also creates ethical, legal, and patient safety challenges. Ethical concerns primarily involve informed consent, patient privacy, and confidentiality, while legal challenges include regulatory ambiguity and uncertainty regarding medical liability. From a patient safety perspective, video may support faster clinical assessment but can also become an administrative gatekeeping mechanism that contributes to referral delays, admission uncertainty, and additional workload for FKTP healthcare workers. Therefore, video should function as a supporting clinical

instrument rather than a mandatory condition that determines emergency referral acceptance.

The findings have practical implications for healthcare administrators and policymakers. Clear operational standards are needed to regulate when video recording is required, how consent and patient data are managed, how videos are stored and transmitted, and how responsibilities are distributed between referring and receiving facilities. Such standards should prioritize clinical urgency and patient safety over administrative procedures.

This study has several limitations. The review was restricted to selected databases, publications from 2021–2026, and English or Indonesian literature, which may have excluded relevant evidence from other sources or languages. In addition, the limited number of studies specifically addressing video as an administrative prerequisite restricts the generalizability of the findings. Future research should therefore investigate this practice empirically through multi-site studies, particularly in Indonesian emergency referral systems, and examine its effects on referral waiting time, patient outcomes, healthcare-worker workload, and hospital acceptance decisions. Further research should also evaluate specific ethical and legal frameworks for safe and accountable video-based referrals.

References

- Baniasadi, S., Griffin, P. M., & Chakraborty, P. (2026). *Emergency department patient flow optimization with an alternative care threshold policy*. Retrieved on February 26, 2026, from <https://doi.org/10.48550/arXiv.2601.10041>.
- Bashshur, R., Doarn, C. R., Frenk, J. M., Kvedar, J. C., & Woolliscroft, J. O. (2020). Telemedicine and the COVID-19 pandemic: lessons for the future. *Telemedicine and e-Health*, 26(5), 571–573. <https://doi.org/10.1089/tmj.2020.29040.rb>.
- Beauchamp, T. L., & Childress, J. F. (2021). *Principles of biomedical ethics* (8th ed.). Oxford: Oxford University Press.
- Benziger, C. P., Huffman, M. D., Sweis, R. N., & Stone, N. J. (2021). The telehealth ten: A guide for a patient assisted virtual physical examination. *The American Journal of Medicine*, 134(1), 48–51. <https://doi.org/10.1016/j.amjmed.2020.06.015>.
- Bolcato, V., Basile, G., Bianco Prevot, L., Fassina, G., Rapuano, S., Brizioli, E., & Tronconi, L. P. (2024). Telemedicine in Italy: Healthcare authorization profiles in the modern medico-legal reading. *International Journal of Risk & Safety in Medicine*, 35(4), 337–343. <https://doi.org/10.3233/JRS-240004>.
- Burgess, L., Ray-Barruel, G., & Kynoch, K. (2022). Association between emergency department length of stay and patient outcomes: A systematic review. *Research in Nursing & Health*, 45(1), 59–93. <https://doi.org/10.1002/nur.22201>.
- Cortellaro, F., Taurino, L., Delorenzo, M., Pausilli, P., Ilardo, V., Duca, A., ... & Sechi, G. M. (2025). Implementation of telemedicine for patients referred to emergency medical services. *Epidemiologia*, 6(3), 36–48. <https://doi.org/10.3390/epidemiologia6030036>.
- Darraj, A., Hudays, A., Hazazi, A., Hobani, A., & Alghamdi, A. (2023). The association between emergency department overcrowding and delay in treatment: A systematic review. In *Healthcare* (Vol. 11, No. 3, p. 385). Paris: MDPI. <https://doi.org/10.3390/healthcare11030385>.
- Durdova, E., Novak, J., & Kralova, P. (2026). Ethical considerations of AI-assisted tele-emergency decision-making systems. *Journal of Medical Artificial Intelligence*, 4(2), 156–174. <https://doi.org/10.1177/205520762514112>.
- Greenhalgh, T., Wherton, J., Shaw, S., & Morrison, C. (2020). Video consultations for COVID-19. *BMJ*, 6(4), 368–378. <https://doi.org/10.1136/bmj.m998>.
- Harrison, R., & Manias, E. (2022). How safe is virtual healthcare? *International Journal for Quality in Health Care*, 34(2), 21–36. <https://doi.org/10.1093/intqhc/mzac021>.
- Hayden, E. M., Davis, C., Clark, S., Joshi, A. U., Krupinski, E. A., Naik, N., ... Society for Academic Emergency Medicine 2020 Consensus Conference. (2021). Telehealth in emergency medicine: A consensus conference to map the intersection of telehealth and emergency medicine. In *Proceedings of the Society for Academic Emergency Medicine 2020*

- Consensus Conference* (pp. 1452–1474). Hoboken: Wiley.
<https://doi.org/10.1111/acem.14330>.
- Herzog, L., Kellmeyer, P., & Wild, V. (2022). Digital behavioral technology, vulnerability and justice: Towards an integrated approach. *Review of Social Economy*, 80(1), 7–28. <https://doi.org/10.1080/00346764.2021.1943755>.
- Hutchings, E., Loomes, M., Butow, P., & Boyle, F. M. (2020). A systematic literature review of researchers' and healthcare professionals' attitudes towards the secondary use and sharing of health administrative and clinical trial data. *Systematic Reviews*, 9(1), 240–254. <https://doi.org/10.1186/s13643-020-01485-5>.
- Iyengar, K., Upadhyaya, G. K., Vaishya, R., & Jain, V. (2020). COVID-19 and applications of smartphone technology in the current pandemic. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 733–737. <https://doi.org/10.1016/j.dsx.2021.102162>.
- Jaffe, T. A., Hayden, E., Uscher-Pines, L., Sousa, J., Schwamm, L. H., Mehrotra, A., & Zachrisson, K. S. (2021). Telehealth use in emergency care during coronavirus disease 2019: A systematic review. *Journal of the American College of Emergency Physicians Open*, 2(3), 124–143. <https://doi.org/10.1002/emp2.12443>.
- Keenan, A. J., Tsourtos, G., & Tieman, J. (2021). The value of applying ethical principles in telehealth practices: Systematic review. *Journal of Medical Internet Research*, 23(3), 256–278. <https://doi.org/10.2196/25698>.
- Khalemsky, M., Bellou, A., Karamercan, M. A., Möckel, M., Castrillo, L. G., & Schwartz, D. G. (2022). Physicians' attitudes towards smartphone-based emergency response communities for anaphylaxis: Survey. *Health Policy and Technology*, 11(1), 100–110. <https://doi.org/10.1016/j.hlpt.2021.100580>.
- Kruse, C. S., Krowski, N., Rodriguez, B., Tran, L., Vela, J., & Brooks, M. (2017). Telehealth and patient satisfaction: A systematic review and narrative analysis. *BMJ Open*, 7(8), 162–172. <https://doi.org/10.1136/bmjopen-2021-054665>.
- Libreros-Peña, L., Quintero, J. A., Gelves, A., Alarcón, J., Morales, S., Escobar, M. F., ... & Diez-Sepulveda, J. (2023). Telemedicine consultation for emergency patients' attention: A clinical experience from a high complex university hospital from Latin America. *BMC Health Services Research*, 23(1), 559–674. <https://doi.org/10.1186/s12913-023-09520-6>.
- Lupton, D. (2017). *Digital health: Critical and cross-disciplinary perspectives*. London: Routledge.
- Mann, D. M., Chen, J., Chunara, R., Testa, P. A., & Nov, O. (2020). COVID-19 transforms health care through telemedicine: Evidence from the field. *Journal of the American Medical Informatics Association*, 27(7), 1132–1135. <https://doi.org/10.1093/jamia/ocaa072>.
- Morley, J., Cows, J., Taddeo, M., & Floridi, L. (2020). Ethical guidelines for COVID-19 tracing apps. *Nature*, 58(10), 29–31. <https://doi.org/10.1007/s13347-020-00419-8>.
- Moynihan, D., Herd, P., & Harvey, H. (2015). Administrative burden: Learning, psychological, and compliance costs in citizen-state interactions. *Journal of Public Administration Research and Theory*, 25(1), 43–69. <https://doi.org/10.1111/puar.13250>.
- Nittari, G., Khuman, R., Baldoni, S., Pallotta, G., Battineni, G., Sirignano, A., ... & Ricci, G. (2020). Telemedicine practice: Review of the current ethical and legal challenges. *Telemedicine and e-Health*, 26(12), 1427–1437. <https://doi.org/10.1089/tmj.2019.0158>.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 37(9), 106–118. <https://doi.org/10.1136/bmj.n71>.
- Reynolds, T. A., Sawe, H., Rubiano, A. M., Shin, S. D., Wallis, L., & Mock, C. N. (2017). Strengthening health systems to provide emergency care. *Disease Control Priorities: Improving Health and Reducing Poverty*, 3(2), 142–156. https://doi.org/10.1596/978-1-4648-0527-1_ch13.
- Rosen, M., Stewart, C. M., Kharrazi, H., Sharma, R., Vass, M., Zhang, A., & Bass, E. B. (2024). Potential harms resulting from patient–clinician real-time clinical encounters using video-based telehealth: A Making Healthcare Safer rapid evidence review. *Journal of Patient Safety and Risk Management*, 29(4), 178–188. <https://doi.org/10.1177/25160435241269665>.
- Sharifi Kia, A., Rafizadeh, M., & Shahmoradi, L. (2023). Telemedicine in the emergency department: An overview of systematic reviews. *Journal of Public Health*, 31(8), 1193–1207. <https://doi.org/10.1007/s10389-021-01684-x>.
- Solimini, R., Busardò, F. P., Gibelli, F., Sirignano, A., & Ricci, G. (2021). Ethical and legal challenges of telemedicine in the era of the COVID-19 pandemic. *Medicina*, 57(12), 1314–1334. <https://doi.org/10.3390/medicina57121314>.

- Sykora, R., Renza, M., Ruzicka, J., Bakurova, P., Kukacka, M., Smetana, J., & Duska, F. (2020). Audiovisual consults by paramedics to reduce hospital transport after low-urgency calls: Randomized controlled trial. *Prehospital and Disaster Medicine*, 35(6), 656–662. <https://doi.org/10.1017/S1049023X2000117X>.
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8(1), 45–66. <https://doi.org/10.1186/1471-2288-8-45>.
- Tsou, C., Robinson, S., Boyd, J., Jamieson, A., Blakeman, R., Yeung, J., ... & Hendrie, D. (2021). Effectiveness of telehealth in rural and remote emergency departments: Systematic review. *Journal of Medical Internet Research*, 23(11), 306–320. <https://doi.org/10.2196/30632>.
- Whitelaw, S., Mamas, M. A., Topol, E., & Van Spall, H. G. (2020). Applications of digital technology in COVID-19 pandemic planning and response. *The Lancet Digital Health*, 2(8), 435–440. [https://doi.org/10.1016/S2589-7500\(21\)00063-9](https://doi.org/10.1016/S2589-7500(21)00063-9).
- Wong, S. H., Cheng, W. R., & Aw, J. (2022). Medical, legal and ethical issues arising from the use of telemedicine in the primary care setting in Singapore. *Singapore Medical Journal*, 66(12), 661–672. <https://doi.org/10.11622/smedj.2022026>.
- World Health Organization. (2021). *Emergency care systems framework*. Retrieved on February 24, 2026, from <https://www.who.int/publications/i/item/emergency-care-systems-framework>.
- World Health Organization. (2022). *WHO guideline: Recommendations on digital interventions for health system strengthening*. Retrieved on February 24, 2026, from <https://www.who.in>.

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Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.



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