Tutorial

Conducting an Ideal Teleoncology Consultation: Step-by-Step Tutorial for Fellows and Practicing Oncologists

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Abstract

Telemedicine has evolved from a pandemic era workaround to a permanent, evidence-based modality of cancer care delivery. Randomized trials demonstrate that, in specific and carefully selected clinical scenarios—most robustly, in telehealth-delivered early palliative care for advanced lung cancer and in electronic patient-reported outcome (ePRO)–based symptom monitoring during systemic therapy—teleoncology achieves outcomes equivalent to those of in-person visits for symptom control, quality of life, and psychological coping, while substantially reducing the financial and physical burden of travel. This evidence does not, however, support universal equivalence across all cancer visit types. The clinical integrity of a virtual oncology encounter depends on a structured, multidomain framework. This tutorial consolidates current oncology-specific evidence and the broader teleconsultation literature into a single, practical, step-by-step pathway for fellows and practicing oncologists. An 8-step operational framework is presented: (1) patient selection and triage; (2) technical infrastructure and "webside manner"; (3) proactive ePRO monitoring; (4) structuring the virtual visit (in 4 phases); (5) video-based physical examination and Eastern Cooperative Oncology Group (ECOG) grading; (6) red-amber-green (RAG) toxicity triage; (7) the virtual SPIKES (setting up, perception, invitation, knowledge, empathy, and strategy) protocol for delivering serious news; and (8) documentation, digital signatures, and care coordination. Ready-to-use tables, decision rules, and scripted clinical examples are provided throughout. Specific thresholds, cut-offs, and procedures not directly supported by a cited randomized trial or professional-society guideline are presented as illustrative starting points for local adaptation, rather than as validated universal standards. The tutorial is anchored in the Brazilian regulatory framework (Conselho Federal de Medicina [Federal Council of Medicine] Resolution 2.314/2022; Lei Geral de Proteção de Dados Pessoais [General Personal Data Protection Law]) but is written to be adaptable to other jurisdictions.

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KEYWORDS

telemedicine; teleoncology; virtual consultations; medical oncology; digital medicine

Introduction

The integration of telemedicine into medical oncology has moved beyond crisis adaptation and is now a recognized component of routine cancer care delivery [1]. Using telecommunication systems to provide care to geographically dispersed patients allows oncology teams to preserve continuity of care, improve access, and reduce the physical and financial burdens of travel [1,2]. The multisite randomized trial of telehealth-delivered early palliative care in advanced non–small cell lung cancer demonstrated noninferiority to face-to-face encounters for quality of life, symptom control, and psychological coping [2]. This evidence should not be extrapolated to assert equivalence of virtual and in-person care across all cancer visit types; initial diagnostic consultations, treatment decision discussions, delivery of serious news, and the assessment of frail symptomatic patients remain indications for which in-person contact is preferable whenever feasible. The legal architecture has matured in parallel: in Brazil, Federal Council of Medicine Resolution 2.314/2022 and Federal Law 14,510/2022 have replaced the emergency framework, establishing teleconsultation as a legitimate medical act subject to the same ethical and technical standards as in-person care [3]. The World Health Organization (WHO) similarly frames telemedicine as a tool for health system strengthening, with particular emphasis on universality and equity [4,5].

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Despite this maturation, the implementation of teleoncology in day-to-day practice remains highly variable. Many oncologists—particularly those in training or in public sector settings—lack access to a consolidated, operationally practical guide that bridges regulatory requirements, technical standards, clinical workflows, and communication skills. The objective of this tutorial is to fill that gap. I present an 8-step framework that can be adopted in both high-resource academic centers and lower-resource public health systems, using readily available technology.

This tutorial is anchored in the Brazilian regulatory environment, where Conselho Federal de Medicina (CFM; Federal Council of Medicine) Resolution 2.314/2022, Federal Law 14,510/2022, and the Lei Geral de Proteção de Dados Pessoais (LGPD; General Personal Data Protection Law) govern teleconsultation practice and data handling. The clinical and operational content, however, is written to be jurisdiction-neutral; readers outside Brazil should substitute their national equivalents (eg, Health Insurance Portability and Accountability Act [HIPAA] and state licensure boards in the United States; the General Data Protection Regulation [GDPR] and national medical councils in the European Union). International guidelines—the ASCO Telehealth Standards, the MASCC-ASCO Survivorship Standards, the UK Oncology Nursing Society (UKONS) 24-Hour Triage Toolkit, and the WHO Consolidated Telemedicine Implementation Guide—are cited as the primary clinical substrate. Throughout the tutorial, specific thresholds, cut-offs, and operational procedures that are not directly supported by a cited randomized trial or professional society guideline reflect pragmatic expert opinion and operational experience; they are illustrative starting points for local adaptation and prospective validation, not validated universal standards, and are introduced with cueing phrases such as “illustrative,” “practical,” or “as a starting point.”

Tutorial Takeaways: Questions for Practice Reflection

The following questions guide reflection on teleoncology practice:

- Does your oncology unit have an explicit 2-step triage protocol to determine which patients are clinically and technically suitable for teleoncology, and is it applied consistently before scheduling virtual visits?
- Are your clinicians trained in webside manner—camera position, lighting, and verbal compensation for the absence of touch—and does your institution provide a standardized previsit checklist for patients and caregivers?
- How would your institution implement a red-amber-green (RAG) toxicity triage system integrated with electronic patient-reported outcome (ePRO) monitoring to allow proactive, nurse-led symptom surveillance between scheduled visits?

Regulatory and Ethical Framework

Professional autonomy is the cornerstone of modern telehealth regulation: the practitioner retains the right to decide whether a remote encounter is clinically appropriate or whether the limitations of the medium require an in-person evaluation [1,3,4]. Patients must be explicitly informed of the digital nature of the visit, the possibility of technical failure, and the data security measures in place; this conversation must be documented in the electronic medical record (EMR) [1,3,5].

Continuity of care is preserved through the principle of longitudinality: digital tools must support, not fragment, the patient’s care journey [4,6,7]. For oncology practice, the ASCO Telehealth Standards [1] and the MASCC-ASCO Survivorship Standards [8,9] provide the framework for person-centered, equitable, and coordinated virtual care.

The 6 principal modalities of technology-mediated health care, each with distinct protocols, are summarized in Table 1.

Table 1. Technology-mediated care modalities and their oncology applications.

Modalities	Operational definitions	Typical oncology applications
Teleconsultation	Synchronous or asynchronous consultation between a physician and a patient	Survivorship follow-up, oral therapy adherence monitoring, and symptom review [10]
Teleinterconsultation	Collaborative interaction between health care professionals	Specialist support for rural sites and complex case discussions [10]
Telediagnosis	Remote interpretation of diagnostic data	Telepathology and teleradiology consensus reads [10]
Telemonitoring	Remote tracking of clinical parameters using medical devices	Electronic patient-reported outcomes–guided symptom surveillance and wearable-based performance status monitoring [10]
Teletriage	Remote assessment to determine the urgency of a patient’s condition and the level of care	Nurse-led 24-hour toxicity triage during systemic anticancer therapy [11]
Multiprofessional telediscussion	Administrative or educational support between health care professionals	Tumor boards, fellow supervision, and case-based teaching [10]

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Step 1: Patient Selection and Preconsultation Triage

Successful teleoncology depends on rigorous, evidence-based selection [1]. A prospective analysis of oncology evaluations by our group demonstrated that the physical examination was normal or unchanged from baseline in the large majority of encounters, and treatment plan changes were predicted primarily by patient-reported symptoms rather than incidental physical findings [11]. Teleoncology is therefore safe and effective for asymptomatic patients undergoing active surveillance or long-term follow-up [9,11]. Conversely, patients with highly symptomatic advanced disease, mucosal or structural complications (eg, head-and-neck cancers undergoing active radiation), severe cognitive or sensory impairment, or marked technophobia without caregiver support should be referred for in-person evaluation [1,11,12].

Teleoncology also delivers substantial economic value: substituting face-to-face visits with virtual encounters significantly reduces out-of-pocket patient costs, supporting treatment adherence, particularly in underserved and rural populations [13,14]. A 2-step triage pathway is recommended: step 1 assesses clinical suitability; step 2 evaluates technical feasibility. Patients who fail either step are referred in person or enrolled in a digital literacy support program (eg, a loaned, preconfigured tablet with hands-on patient portal training) [13]. Tables 2, 3, and 4 operationalize the suitability decision and consolidate bandwidth requirements and environmental standards. Figure 1 [1,2] summarizes the operational pathway of the entire tutorial.

Table 2. Infrastructure guide for teleoncology: patient suitability matrix.

Domains	Prioritize in-person	Prioritize teleoncology
Encounter type	Initial diagnostic consultation, first dose of antineoplastic therapy, and disclosure of complex progression	Routine survivorship follow-up, interval toxicity monitoring, and early palliative care
Clinical status	Symptomatic advanced disease, unexplained deterioration, and need for a complex physical examination	Asymptomatic surveillance; stable oral therapy; and minor, well-managed chronic side effects
Cancer subtype	Advanced gastrointestinal and head and neck cancers requiring frequent locoregional examination	Thyroid and endocrine tumors and clinically stable solid and hematologic tumors
Socio-technical factors	Severe cognitive, visual, or auditory impairment; lack of a suitable device or internet connection; and unresolvable technophobia	Availability of an active caregiver, a camera-enabled device, and adequate digital and health literacy

Table 3. Infrastructure guide for teleoncology: bandwidth requirements (requirements; not universal minimums).

Video quality	Bandwidth (symmetrical)	Recommended use
Standard definition	350-600 Kbps	Audio-led consultations or low-bandwidth settings [15]
High definition (720p)	1.2-1.5 Mbps	Standard 1:1 oncology consultations [15]
Full high definition (1080p)	2.5-3.5 Mbps	Detailed virtual examinations (eg, rash, wound, and oral cavity) [15]
Group (≥4 participants)	≥7.5 Mbps	Multidisciplinary tumor board and family meeting [15]
Rural or satellite connection	Variable (high latency)	Platform optimization for high latency and prearranged audio-only fallback [15,16]

Table 4. Infrastructure guide for teleoncology: webside manner standards.

Parameters	Ideal configuration	Rationale
Camera	At eye level (using a stand or books)	Simulates natural gaze and reinforces professional authority [17]
Lighting	Front-facing and avoid backlighting	Avoids facial shadows and improves diagnostic image clarity [17]
Backdrop	Neutral, uncluttered, and solid-colored	Reduces distractions and enhances webcam focus [15]
Audio	Headset with a directional microphone	Minimizes echo and captures soft or labored speech [15]
Attire	White coat with a visible ID badge	Sustains a formal clinical atmosphere [17]

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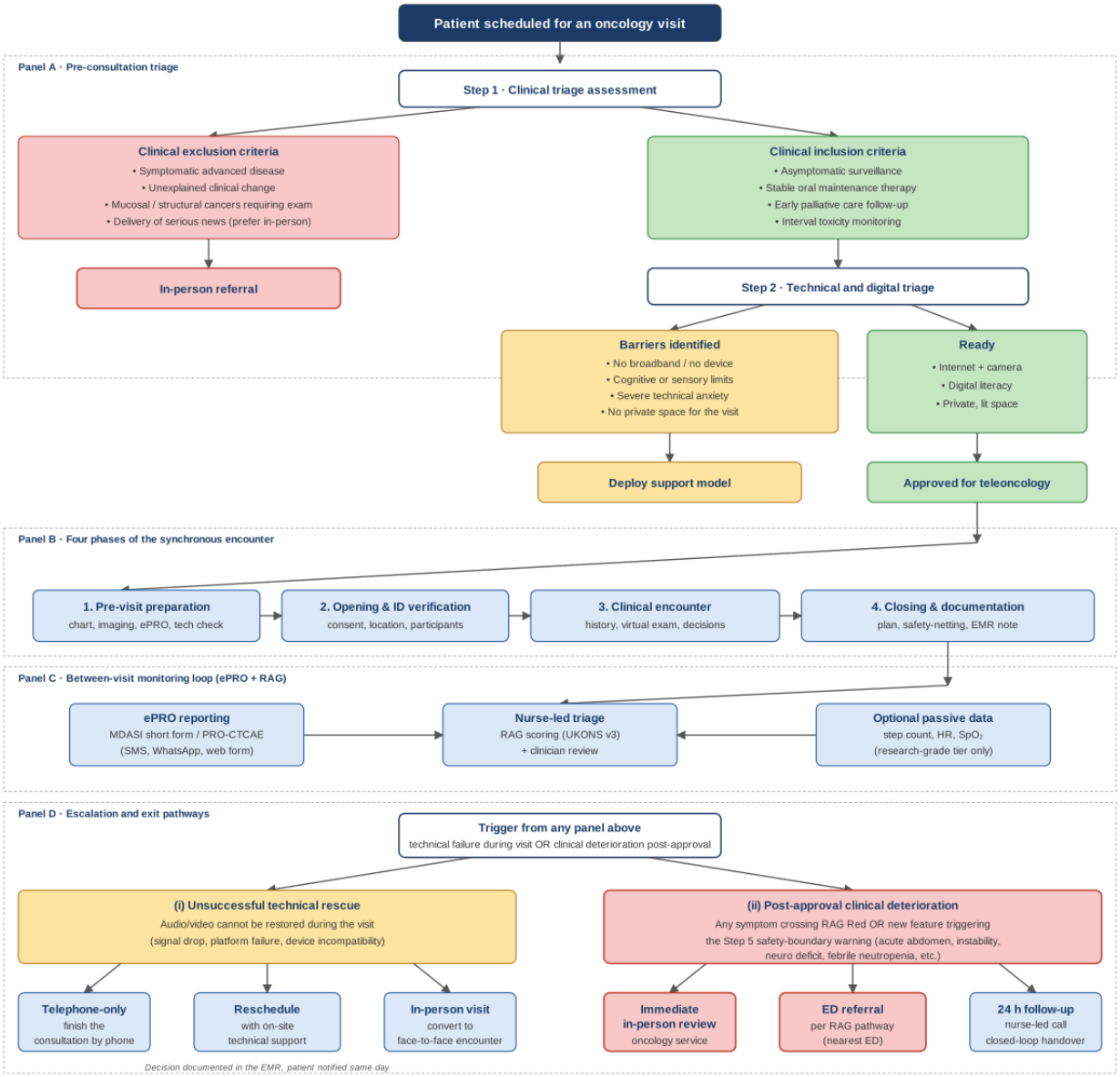
Figure 1. Operational pathway of the ideal teleoncology consultation. Panel A describes the 2-step preconsultation triage, comprising step 1 (clinical criteria) and step 2 (technical and digital criteria). Patients with barriers enter a support model, whereas those meeting both steps are approved for teleoncology. Panel B illustrates the 4 phases of the synchronous encounter: previsit preparation, opening and identity verification, clinical encounter, and closing and documentation. Panel C shows the between-visit electronic patient-reported outcome (ePRO) and red-amber-green (RAG) monitoring loop (UKONS version 3), with passive wearable data being optional. Panel D describes the escalation pathways. (1) Unsuccessful technical rescue results in a telephone-only consultation, rescheduling with on-site support, or conversion to an in-person visit. (2) Postapproval clinical deterioration (RAG red or a step 5 safety-boundary trigger) requires immediate in-person review or emergency department (ED) referral, followed by nurse-led 24-hour follow-up and closed-loop handover [1,2]. EMR: electronic medical record; HR: heart rate; MDASI: MD Anderson Symptom Inventory; PRO-CTCAE: Patient-Reported Outcomes Version of the Common Terminology Criteria for Adverse Events; SpO2: peripheral oxygen saturation.



Step 2: Technical Infrastructure and Webside Manner

Overview

Diagnostic integrity in a teleconsultation is inseparable from technical quality. Recommended configurations are summarized in Table 3 and are derived from vendor and professional-society technology guidance [16]. These are target values for an optimal consultation, not universal minimum requirements. Consultations have been successfully conducted using third-generation mobile connections with an audio-only fallback; the key operational principle is that the clinician must be prepared to transition seamlessly from high-definition video to standard-definition video, to audio, and finally to telephone, and to defer nonurgent components of the encounter when connectivity is inadequate. A wired Ethernet connection is preferred where available [16]. The clinician end point should include a professional-grade webcam and a noise-canceling headset [7,16].

Webside manner—the behavioral adaptations needed to project authority and warmth through a screen—is as clinically important as technical setup [15,17]. Three habits are essential: position the camera at eye level and look into the lens (not the patient's image) to simulate eye contact; wear a white coat with

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a visible identification badge; and become more verbally explicit than in face-to-face encounters, narrating any action that momentarily diverts attention (eg, "I am looking at your laboratory results from last month") [15,17]. Table 4 consolidates these standards.

Minimal Viable Teleoncology Workflow for Resource-Constrained Settings

A safe baseline teleoncology service can be built from the essential tier of resources: (1) a patient-held smartphone with a stable connection; (2) a validated short ePRO instrument (eg, the MD Anderson Symptom Inventory [MDASI] short form or Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events [PRO-CTCAE] core items) administered by SMS, a WhatsApp (Meta Platforms Inc) message, or a simple web form; (3) a standard video platform; (4) written, plain-language safety-netting instructions provided to the patient and caregiver before the visit; (5) a documented escalation pathway to the local oncology service or emergency department; and (6) the 2-step triage described in step 1. Research-grade accelerometers, continuous heart rate monitoring, home spirometry, digital stethoscopes, 12-lead wireless electrocardiogram (ECG), and integrated monitoring dashboards (refer to step 5) are enhancements, not prerequisites, and the clinical workflow does not depend on them.

Step 3: Proactive Remote Patient Monitoring

A high-quality virtual consultation should be understood as 1 node in a continuous monitoring system, not an isolated video call [13]. Integrating ePROs with passive biometric data, where available, creates a safety net between scheduled visits [13]. The definitive results of the Patient-Reported Outcomes to Enhance Cancer Treatment (PRO-TECT) cluster randomized trial (52 US community oncology practices and 1191 patients with metastatic cancer) showed that weekly ePRO-based symptom monitoring with care team alerts did *not* improve overall survival (the primary end point; hazard ratio [HR] 0.99, 95% CI 0.83-1.17; *P*=.86) but did significantly delay deterioration in physical function (median 12.6 vs 8.5 months; HR 0.73; *P*=.002), symptoms (12.7 vs 9.9 months; HR 0.69; *P*<.001) and health-related quality of life (15.6 vs 12.2 months; HR 0.72; *P*=.001), and reduced the cumulative incidence of emergency visits by approximately 6.1% [17]. These findings are consistent with an earlier, smaller single-center trial that had reported an overall survival benefit [18], but the larger multicenter PRO-TECT trial did not replicate the survival signal. The current evidence therefore supports ePRO monitoring as an intervention that improves physical function, symptom control, quality of life, and acute care use, with no demonstrable effect on overall survival in the definitive multicenter analysis.

A practical, resource-tiered architecture can be built as follows. In the essential tier, patients complete a validated short ePRO instrument (eg, the MDASI short form [19]) through SMS, WhatsApp, or a web form at regular intervals, and the nursing team receives a daily digest. In the recommended tier, a structured ePRO platform with automated alerts is combined with a home pulse oximeter and blood pressure cuff. In the optional (research grade) tier, patients may additionally wear an accelerometer (eg, the ActiGraph GT9X; ActiGraph LLC) and other peripherals [20,21].

Two automated alert thresholds—a passive trigger when daily step count falls to ≤1500 steps and an active trigger when any MDASI item reaches ≥4 out of 10 (moderate-to-severe)—are proposed as illustrative operational starting points, derived from exploratory feasibility studies in solid tumor outpatients [20,21] and from the author's operational experience. They are *not* validated universal thresholds. Each service should calibrate triggers against (1) the patient's pretreatment baseline step count and symptom profile—a relative drop of ≥30% from that baseline is likely to be a more sensitive signal than any absolute cutoff; (2) baseline Eastern Cooperative Oncology Group (ECOG) performance status; (3) comorbidity burden; (4) the toxicity profile of the current regimen; and (5) local resources for in-person review. In frail or heavily pretreated patients, rigid application of absolute cutoffs will generate false positives, and any threshold activation should trigger clinical review by the nursing or physician team, never an automated action.

Step 4: Structuring the Virtual Visit in 4 Phases

The virtual consultation should follow a structured, sequential workflow [1]. A critical pitfall to anticipate is the digital caregiver gap: in randomized trials of telehealth-delivered palliative care for advanced lung cancer, caregiver participation during video visits was significantly lower than during in-person visits (36.6% vs 49.7%) [2]. Because caregivers are often essential for treatment adherence and psychosocial support, the clinician should actively invite—but never impose—their participation at the start of each call, respecting the patient's preference and consent.

The four phases of a virtual visit are: (1) previsit preparation; (2) opening and identity verification; (3) the clinical encounter itself (history, virtual examination, and shared decision-making); and (4) closing, documentation, and care coordination. Explicit operational boundaries must be set during each visit: the clinician should remind the patient of portal message response times and that emergency services—not the virtual platform—should be contacted during an acute crisis [22]. To ensure that the teleconsultation is successful, a previsit checklist is shown in Table 5.

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Table 5. Previsit checklist for clinicians, patients, and caregivers.

Previsit items	Clinician action	Patient or caregiver action
Technical	Verify connection speed and prepare a fallback platform [15]	Test device audio and video and charge the device [23]
Clinical	Review the charts, recent imaging, and electronic patient-reported outcome trends before the call [10]	Gather all current medications and home-measured vital signs [23]
Environmental	Secure a private space with a neutral backdrop and front-facing lighting [15]	Choose a quiet, well-lit room and turn off the television and notifications [23]
Documentation	Confirm the validity of the digital certificate (eg, Infraestrutura de Chaves Públicas Brasileira [Brazilian Public Key Infrastructure]–Brasil for Brazilian practice) [24,25]	Keep paper and a pen ready to write down instructions [23]
Safety	Identify the patient's emergency phone number and local hospital [17]	Arrange for a caregiver if balance, cognition, or mobility is impaired, with the patient's prior consent [23]

Step 5: The Virtual Physical Examination (Tele-examination)

Overview

Although palpation and direct auscultation are impossible by video, clinicians can gather robust clinical information through structured visual inspection and guided proxy observation by the patient or caregiver [1] (Textbox 1). The clinician watches for subtle visual indicators of pain or dysfunction—muscle guarding, facial grimacing, and postural asymmetry—while verbally directing the proxy examiner [26].

Assessment in the home environment can be more representative than assessment in the clinic: taxing travel may cause patients to skip supportive medications (eg, diuretics), producing transient symptoms at the clinic visit [27]. Observing the patient in their stable, natural setting eliminates this artifact.

Textbox 1. Safety boundary: proxy examination is not a substitute for in-person evaluation.

Proxy physical examination performed by the patient or caregiver is a supportive adjunct only. Virtual care *must* be converted to immediate in-person assessment, or the patient referred to the emergency department, whenever any of the following is suspected: acute abdominal pathology, suspected bowel obstruction or perforation, hemodynamic instability (tachycardia with hypotension or altered mental status), severe or new dyspnea, new focal neurologic deficit, uncontrolled bleeding, suspected spinal cord compression, febrile neutropenia (any fever ≥38.0 °C within 6 weeks of systemic anticancer therapy), or any pain that the patient or caregiver cannot characterize reliably. The oncologist, not the caregiver, remains legally and ethically responsible for every clinical decision arising from a teleconsultation.

General Visual Inspection

Begin by assessing breathing pattern, speech clarity, cognitive orientation, posture, and overall presentation to identify systemic deterioration, respiratory distress, or neurological change [28].

Guided Self- and Caregiver-Assisted Observations

The patient- or caregiver-assisted examination maneuvers are as follows.

For the integumentary system, direct the camera to inspect for drug-induced rash, hand-foot syndrome, central venous catheter (CVC) site erythema, bruising, and petechiae [1,26]. Experience from direct-to-consumer telemedicine services supports the feasibility of patient- or caregiver-held smartphone imaging for visible skin findings, provided the clinician gives explicit framing, distance, and lighting instructions [26].

For the nail beds: inspect for subungual hemorrhage or paronychia (epidermal growth factor receptor [EGFR] inhibitors and taxanes) [29].

For pretibial edema: direct the caregiver to press firmly over the tibia for 5 seconds and visually assess pitting edema. Caregiver inspection of edema is a reasonable adjunct for a stable, known chronic finding; new or asymmetric lower-limb swelling that could reflect deep vein thrombosis warrants in-person assessment.

For the abdomen (observational only): guide the patient or caregiver in performing light, 2-finger palpation of the 4 quadrants only to localize a reported discomfort and observe facial expression. Rebound tenderness, deep palpation, and assessment of peritoneal signs *cannot* be reliably performed by proxy and must never be used to rule out an acute abdomen. Any suspicion of acute abdominal pathology mandates immediate in-person assessment per the safety boundary box above.

For the oral cavity: use a smartphone flashlight to inspect for mucositis and candidiasis [26].

For the cranial nerves: assess pupil symmetry, conjugate gaze, and eye movements by asking the patient to follow a finger across the screen [30]. Detailed cranial nerve and sensory examinations cannot be performed by proxy.

The following maneuvres *cannot* be performed by proxy and are not substitutes for in-person evaluation when clinically indicated: rebound tenderness and other signs of peritoneal irritation; deep abdominal palpation; detailed cranial nerve examination beyond gross inspection; sensory examination; detailed neurological examination (power, tone, reflexes, and cerebellar signs); and auscultation other than with a dedicated digital stethoscope operated by a training user.

From a medico-legal perspective, the limits of the virtual encounter and the specific safety-netting instructions given to the patient and caregiver should be documented in the EMR at

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the close of every teleconsultation. This documentation, together with explicit instructions on when to seek in-person care, is essential to mitigate liability exposure, consistent with the ASCO Telehealth Standards [1].

Video-Based Performance Status Observations (Supportive but Not a Substitute for Conventional ECOG Assessment)

Accurate ECOG grading is essential for systemic anticancer therapy (SACT) eligibility decisions. The video-based observations summarized in Table 6 are intended to supplement, not replace, the conventional ECOG assessment, which also incorporates self-care, activity level, and the proportion of waking time spent in bed or in a chair. They should not be used as the sole basis for ECOG assignment, particularly when performance status will determine treatment eligibility (eg, systemic therapy continuation, trial enrolment, or dose adjustment). When a discrepancy exists between video observation and patient- or caregiver-reported function, the lower (worse) functional estimate should prevail, and in-person reassessment should be arranged [27,31].

Table 6. Supportive video-based observations to inform Eastern Cooperative Oncology Group (ECOG) performance status assessment during teleconsultation[a].

ECOG performance status	Clinical definitions	Supportive video observations
0	Fully active; able to perform all activities at the pre-disease performance level without restriction	Observe rapid, fluid movements while the patient adjusts the camera. Confirm normal, unlabored breathing and clear speech.
1	Restricted in strenuous activity but ambulatory and able to do light work	Ask the patient to sit upright in a standard chair and stand without using their arms for support.
2	Ambulatory and capable of self-care but unable to work; up and about for >50% of waking hours	Ask the patient to walk approximately 3 m across the room, turn, and return. Observe gait, stability, speed, and use of assistive devices [27,31].
3	Limited self-care; confined to a bed or chair for >50% of waking hours	Note whether the patient remains reclined during the consultation and whether physical assistance is required for positioning.
4	Completely disabled; totally confined to a bed or chair	Confirm that the patient is bedbound. Assess vocal strength, alertness, and responsiveness remotely.

[a]These observations are intended to supplement, not replace, the conventional ECOG assessment, which also incorporates self-care, activity level, and the proportion of waking time spent in bed or in a chair.

Optional Clinical Peripherals (For Advanced Setups Only and Not Required for a Safe Baseline Workflow)

For advanced setups—survivorship clinics, decentralized clinical trials, and remote rural sites with structured support—Bluetooth- or USB-enabled peripherals substantially expand diagnostic reach: digital stethoscopes (for pleural effusion, pneumonitis, and anthracycline-associated murmurs) [32]; handheld examination cameras (for skin, wounds, and CVC sites) [33]; 12-lead wireless ECGs (for QT monitoring during cardiotoxic regimens) [33]; home spirometers (for bleomycin- or immune checkpoint inhibitor–associated pneumonitis surveillance) [33]; and digital otoscopes (head-and-neck and pediatric oncology) [33]. These peripherals are enhancements to the essential tier described above and are not required for a safe baseline teleoncology service.

Step 6: Toxicity Triage With the RAG System

Standardized symptom triage is essential during SACT [10]. The UKONS 24-Hour Triage Toolkit, version 3, provides an evidence-based RAG scoring system aligned with the Common Terminology Criteria for Adverse Events and has been piloted with positive clinical evaluations and no associated adverse events [34]. Decision rules are explicit: all-green—low risk, reassure and continue monitoring; 1 amber—moderate risk, initiate active monitoring and schedule follow-up within 24 to 48 hours; any red or multiple ambers—significant risk, arrange immediate face-to-face assessment or direct the patient to the nearest emergency department [34]. Tables 7 and 8 provide a simplified reference for the RAG criteria and the video-to-in-person conversion thresholds.

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Table 7. Simplified toxicity triage reference based on the UK Oncology Nursing Society (UKONS) 24-Hour Triage Toolkit, version 3 [34][a].

Toxicity domains	Green (low risk)	Amber (moderate risk)	Red (high risk or urgent in-person evaluation)
Fever or systemic infection	Temperature ≤37.5 °C; patient feels well	Temperature 37.6-37.9 °C; patient otherwise well; close monitoring	Temperature ≥38.0 °C at any single reading within 6 weeks of systemic anticancer therapy, 2 readings ≥37.5 °C taken 1 hour apart, or any fever accompanied by rigors or feeling unwell
Diarrhea	Normal bowel habit or 1-2 additional stools/day above baseline	3-4 additional loose stools/day; mild-to-moderate cramping; no dehydration	≥5 additional loose stools/day, severe pain, blood or mucus, signs of dehydration, or symptoms lasting >24 hours despite antidiarrheal measures
Bruising or bleeding	No new bruising, bleeding, or petechiae	New localized bruising or petechiae without trauma	Generalized petechiae, spontaneous mucosal bleeding, epistaxis, or hematuria
Confusion or cognition	Normal cognition and unchanged from baseline	Mild disorientation that does not interfere with daily activities	Moderate-to-severe disorientation, acute confusion, or sudden decline in alertness
Cardiorespiratory	No chest pain, palpitations, or dyspnea	Mild exertional dyspnea that resolves rapidly with rest	Acute chest pain or dyspnea at rest; bypass triage and activate emergency services

[a]This table is a simplified quick-reference aid for the teleconsulting clinicians and does not replace the full validated UKONS toolkit, which should be used by any triaging telephone service, or override local or institutional emergency pathways. Patients with a red classification must be instructed to proceed immediately to the oncology emergency pathway or the nearest emergency department. The clinician should recall that fever, diarrhea, dyspnea, and new bleeding require individualized assessment based on the patient's baseline status, the SACT regimen, and time elapsed since the last dose.

Table 8. Clinical scenarios for video consultation and criteria for conversion to in-person care.

Clinical scenarios	Video visit appropriate	In-person evaluation required
Symptom monitoring during oral therapy	Stable side effects, routine adherence, and ePRO[a] review	Suspected drug-induced pneumonitis, severe diarrhea, and new neurologic deficit
Surveillance after curative treatment	Imaging review and patient counseling	Reproducible focal pain, new palpable mass, and unexplained weight loss
Palliative care follow-up	Symptom titration, goals-of-care conversation, and family meeting	Uncontrolled pain or dyspnea, suspected spinal cord compression, and hypercalcemia
Head and neck cancer	Counseling and ePRO review	Trismus, new neck mass, dysphagia, and airway compromise
Cardio-oncology monitoring	Blood pressure and ePRO trend review during cardiotoxic therapy	Chest pain, new heart failure symptoms, and syncope

[a]ePRO: electronic patient-reported outcome.

Step 7: Delivering Serious News—The Virtual Setting Up, Perception, Invitation, Knowledge, Empathy, and Strategy Protocol

Delivering serious news—disease progression, treatment futility, or the transition to comfort-focused care—is among the most demanding tasks in oncology, and the virtual medium adds specific challenges [22]. American Society of Clinical Oncology (ASCO) guidance on communication in cancer care emphasizes that clinician training, adequate preparation, and dedicated time are essential for these conversations in the virtual setting [22]. The evidence-based SPIKES (setting up, perception, invitation, knowledge, empathy, and strategy) protocol [35] adapts to the virtual environment as virtual SPIKES [36]:

In the setting up step, eliminate background noise, silence notifications, and ensure front lighting. Confirm who is in the room on the patient's side and who is off camera. Caregiver presence during a conversation about serious news should be guided by the patient's explicit preference and consent, elicited and documented in advance. Default inclusion of family members without the patient's prior agreement risks breaching confidentiality and undermining patient autonomy [36]. The following script may be used to confirm the patient's consent and privacy [36]: "Before we review the imaging results, I want to confirm that you have the privacy you want for this conversation. Earlier you asked that your [spouse / son / etc.] join us; are you still comfortable with that? Is anyone else within hearing?"

In the perception step, ask the patient to explain their understanding of their current situation before sharing data [35].

In the invitation step, confirm readiness to receive information and ask how much detail is desired [35].

In the knowledge step, deliver information clearly, without jargon, in small pieces, pausing frequently. Watching the camera lens—not the patient's image—maintains simulated eye contact throughout [36].

In the empathy step, watch for nonverbal cues on screen. Use explicit verbal validation to compensate for the impossibility of physical touch [36].

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In the strategy: develop a clear, step-by-step plan collaboratively. Verify comprehension with the teach-back method: ask the patient to summarize the plan in their own words [36].

Step 8: Documentation, Digital Signatures, and Care Coordination

Every teleconsultation must be thoroughly documented in the EMR. The clinical note must include explicit informed consent for virtual care; confirmed physical locations of the patient and clinician; names of all participants; the secure platform used; start and end times; the limits of the virtual encounter actually conducted; the specific safety-netting instructions given to the patient and caregiver; and an updated care plan [1].

Legal Obligations (Jurisdiction Dependent)

Minimum data retention periods, mandatory disclosure to patients, breach-notification timelines, and the legal validity of electronic signatures are determined by the local legal framework and must be checked against national law. In Brazil, the LGPD and CFM Resolution 2.314/2022 govern teleconsultation data handling; prescriptions and reports require a digital signature in the Infraestrutura de Chaves Públicas–Brasil standard, which confers legal equivalence to paper documents [24,25], and pharmacists and patients can verify signatures in real time via the Instituto Nacional de Tecnologia da Informação–provided validator [37]. In the United States, HIPAA defines the minimum privacy, security, and breach-notification requirements. In the European Union, the GDPR applies. Readers outside these jurisdictions must consult their own national requirements. Electronic informed consent for teletrials is at least as effective as paper consent for patient comprehension when clear, lay-language descriptions are provided [38]; the NCCN Informed Consent Language Database is a recommended resource [39,40].

Recommended Security Practices (Jurisdiction Neutral)

As technical defaults applicable in most settings, I recommend end-to-end encryption with Transport Layer Security–1.3 in transit and Advanced Encryption Standard–256 (AES-256) at rest, multifactor authentication, role-based access control, Secure Hash Algorithm–256 (SHA-256) integrity checks, audit logging, and secure disposal of recordings. In Brazil, LGPD-aligned best practice additionally recommends immutable logs retained for at least 2 years. These are good-practice defaults and not legal mandates in every jurisdiction; readers should align them with the retention and encryption requirements of their national framework.

Postconsultation Care Coordination

Postconsultation care coordination—tumor board referrals, advanced practice provider handoffs, and referrals to physical therapy, nutrition, palliative care, and psycho-oncology—should follow every encounter [8].

Conclusions

Teleoncology, conducted with discipline, is a complementary—not a substitute—modality for the in-person oncology encounter. The 8-step framework presented here, from patient selection and technical setup through virtual examination, RAG triage, virtual SPIKES communication, and documentation, can be adopted in both academic centers and public sector oncology services with existing technology. Figure 1 [1,2] summarizes this operational pathway.

Several specific components of the framework—including the step count and MDASI thresholds in step 3, the video-based supportive observations in step 5, and the simplified RAG table in step 6—have not yet been formally validated and should be adopted as locally adaptable aids pending prospective evaluation. I hope that this tutorial will catalyze that validation effort rather than foreclose it.

Three strategic priorities summarize the framework. First, build technological maturity: symmetrical connectivity, professional peripherals where available, and zero-trust data security—recognizing that the essential tier (smartphone, basic ePRO, standard video platform, and written safety-netting instructions) is sufficient to safely implement teleoncology surveillance in a resource-constrained setting. Second, develop tele-examination proficiency through deliberate practice, using the patient or caregiver as a trained proxy observer within clearly defined safety boundaries. Finally, maintain triage vigilance: keep a low threshold for converting to in-person care, and remember that the ideal teleoncology consultation is also defined by knowing when to stop the video.

Generative AI Use

The author declares that generative AI (Claude Opus 4.7; Anthropic PBC) was used to assist with language editing, structural refinement, and reference formatting in this manuscript. All AI-assisted content was critically reviewed, verified against primary sources, and edited by the author, who takes full responsibility for the accuracy and integrity of the final manuscript. No AI tool is listed as an author, and none was used to fabricate data or interpret clinical findings.

Conflicts of Interest

None declared.

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Abbreviations

AES-256: Advanced Encryption Standard–256
ASCO: American Society of Clinical Oncology
CFM: Conselho Federal de Medicina
CVC: central venous catheter
ECG: electrocardiogram
EGFR: epidermal growth factor receptor
ePRO: electronic patient-reported outcome
ECOG: Eastern Cooperative Oncology Group
EMR: electronic medical record
GDPR: General Data Protection Regulation
HIPAA: Health Insurance Portability and Accountability Act
HR: hazard ratio
LGPD: Lei Geral de Proteção de Dados Pessoais
MDASI: MD Anderson Symptom Inventory
PRO-CTCAE: Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events

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PRO-TECT: Patient-Reported Outcomes to Enhance Cancer Treatment
RAG: red-amber-green
SACT: systemic anticancer therapy
SHA-256: Secure Hash Algorithm–256
SPIKES: setting up, perception, invitation, knowledge, empathy, and strategy
UKONS: UK Oncology Nursing Society
WHO: World Health Organization

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