

Advanced Medical Screening and Safety in Telehealth

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Learning Outcomes

- Implement a thorough systems review in a telehealth setting
- Categorize patients based on clinical appropriateness for remote care versus those requiring care beyond the telehealth scope of practice
- Construct an emergency procedures protocol specific to a remote telehealth environment
- Prioritize patient safety considerations when delivering rehabilitative care via telehealth

Chapter 1

Medical Screening in Remote Care



Why Do We Screen in Telehealth?

- **Confirm telehealth appropriateness:** assess whether remote care matches patient needs, acuity, and home setup or whether in-person intervention is required
- **Identify yellow/red flags:** screen for non-musculoskeletal/systemic issues (e.g., infection, fracture, cancer) via visual cues and patient report
- **Monitor subtle progression:** track systemic/neoplastic conditions over serial remote visits when early signs may be masked
- **Prioritize critical elements:** focus remote exams on the highest-impact impairments (balance, mobility) and safety risks first

Why Do We Screen in Telehealth? (cont.)

- **Systems review** in a telehealth setting to identify non-neuromusculoskeletal pathology
- **Categorize patients**
- **Medical referral**
- **Emergency procedures**

Categorize Patients

- Remote care vs. in-person care vs. medical referral
 - Telehealth appropriate
 - In-person care
 - Refer to an MD

How Do We Screen in Telehealth?

- Systems review in a telehealth setting to identify non-neuromusculoskeletal pathology
- Categorize patients
- **Medical referral**
- **Emergency procedures**

Telehealth Screening: Risk Management

Flag Urgent Cases

- Stop remote rehab
- Direct to ER/
in-person MD
- Example: chest pain,
stroke symptoms

Align With Regulations

- State PT practice acts
- Payer telehealth policies
- Clinic protocols

Considerations for Determining Appropriateness of Virtual Care

- Patient-specific
- Environmental
- Technical



Patient-Specific Screening Factors

- Medical acuity/stability
- Digital literacy and tech confidence
- Cognitive/physical ability to participate
- Health literacy and language proficiency

Medical Acuity

Acute → In-person

- New fractures/trauma
- Pain >7/10, acute swelling
- Night pain
- Red flags
(night pain, fever)

Stable → Telehealth

- Education
- Guided exercise
- Symptom management

Digital and Health Literacy

- Access: owns smartphone/tablet with camera and has reliable internet
- Setup: can download apps and log into portals
- Navigation: able to join a visit from a link
- Communication: comfort with audio, video, and chat features
- Troubleshooting: can follow basic troubleshooting issues
- Comfort: expresses comfort or prior experience

Cognition

- Attention
- Memory
- Executive function
- Communication

Screening for Accommodations

- Physical
- Auditory
- Visual
- Language

Environmental Screening Factors

- Home safety
- Quiet, private space for sessions
- Caregiver availability if needed



Home Safety Screening

- Screen **space** for safe exercise performance, including transfer and gait activities
- Assess **lighting** to visualize posture, movement quality, and skin color changes
- Identify **hazards** such as loose rugs, pets, or clutter that increase fall risk

Environment and Caregiver Assist



Technology-Related Screening Factors

- Device access (smartphone/tablet/camera)
- Software compatibility (app/browser)
- Audio/video settings and quality
- Ease of setup
- Battery life during sessions
- Internet connection quality

1. Kemp et al., 2025
2. Huang et al., 2025
3. National Academies of Sciences, Engineering, and Medicine, 2022

Technical Factors for Safe Remote Care

- Ensure patients know how to access **technical support** before and during sessions
- Establish **backup communication** (phone, messaging) if the primary platform fails



Chapter Summary

- Telehealth screening integrates personal, environmental, and technical factors to ensure safety
- Screening determines **appropriateness for remote care** and flags patients needing in-person evaluation
- Caregiver support, home layout, and **digital literacy** significantly influence feasible interventions
- Clear consent, roles, and **backup communication** are essential for managing unexpected events remotely

Chapter 2

Advanced Medical Screening in Digital Care



Remote Examination: Overview

- Leverage **digital intake forms**
- Focused **subjective interview**
 - Detailed review of systems/screening
- **Observation** of patient, environment, and comfort with tech
- Comprehensive **systems review**
- **Physical exam**, functional tests, and telemedicine assessments²

1. DeLaRosby et al., 2024

2. Lu et al., 2022

Screening

- **Red flags**
 - Indicate high risk of serious pathology
- **Diagnostic “caution” flags**
 - Findings that require clarification, closer questioning, and monitoring
- Integrate flag information with **age, gender, past medical history**, and known **risk factors**

Red Flag: Constitutional Symptoms

Indicate Systemic Illness

- **Fever**
- Diaphoresis/sweating
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope (fainting)**
- **Fatigue**
- **Weight loss**

Red Flag: Constitutional Symptoms (cont.)

Indicate Systemic Illness

- **Fever**
- Diaphoresis/sweating
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope**
- **Fatigue**
- **Weight loss**
- **Refer**
 - 99.5°F or higher for more than two weeks
 - Older adults: 98.9°F or higher
 - Urgent referral if 102°F or higher

Red Flag: Constitutional Symptoms (cont.)

Indicate Systemic Illness

- **Fever**
- Diaphoresis
- Sweats
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope**
- **Fatigue**
- **Weight loss**
- **Refer**
 - Low-level nausea
 - Duration of two weeks
 - No clear explanation

Red Flag: Constitutional Symptoms (cont.)

Indicate Systemic Illness

- **Fever**
- Diaphoresis
- Sweats
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope**
- **Fatigue**
- **Weight loss**
- **Distinguish cause**
 - Postural hypotension → known CV impairments?
 - Positional → vestibular
 - Motion sickness/sensitivity → vestibular

Red Flag: Constitutional Symptoms (cont.)

Indicate Systemic Illness

- **Fever**
- Diaphoresis
- Sweats
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope**
- **Fatigue**
- **Weight loss**
- **Refer**
 - Unexplained
 - Duration of more than two weeks
 - Marked by a change in the ability to complete ADLs

Red Flag: Constitutional Symptoms (cont.)

Indicate Systemic Illness

- **Fever**
- Diaphoresis
- Sweats
- **Nausea/vomiting**
- Diarrhea
- Pallor
- **Dizziness/syncope**
- **Fatigue**
- **Weight change**
- **Refer**
 - Change of 5%–10% in body weight without trying
 - Four- to six-month period
 - Clarify GLP-1 usage

Red Flag: Night Pain

- Unrelenting **night pain** that awakens the patient from sound sleep
- Not alleviated by a change in position
- Accompanied by shortness of breath, sweating, and other symptoms
- **RED FLAG:** night pain + history of **malignancy, infection, or ischemic heart disease**
- **RED FLAG: nonmechanical patterns** (e.g., relieved by sitting upright but worsened by walking) indicate potential cardiac or visceral origin¹
- Pain that worsens with weight-bearing

1. Boissinault, 2010

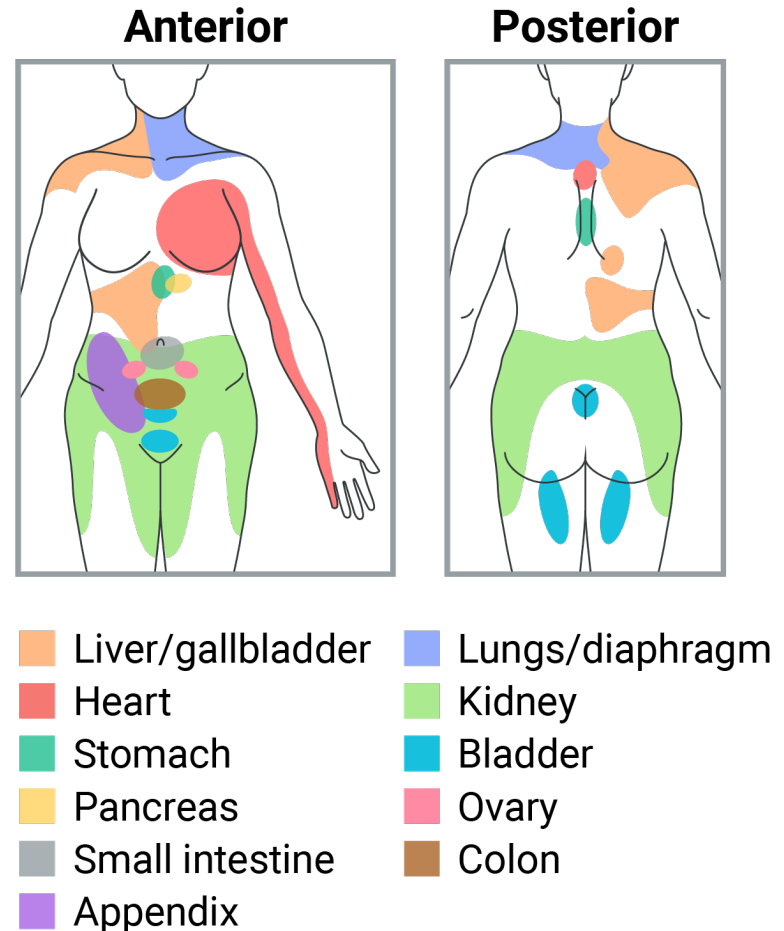
Red Flag: Prolonged Stiffness

- Unexplained stiffness lasting **60 minutes or longer**
 - Typical **post-rest gel** in degenerative joint disease resolves within about 30 minutes
 - Stiffness lasting **60+ minutes** suggests systemic or inflammatory involvement
 - **Aggravated by rest** and **alleviated by activity**
- Concurrent **systemic complaints** strengthen suspicion for inflammatory disease

Viscerogenic Pain

- **Poorly localized**, diffuse, and non-dermatomal
- Descriptors: gradual, **progressive**, cyclical, and constant
- Associated **autonomic** signs
 - Sweating, heart rate changes, and pallor during painful episodes

Referred Pain



Viscerogenic Pain: Organ-Specific Clues

- **Gallbladder:** may ease with forward leaning
- **Kidney:** may improve with leaning toward the affected side
- **Pancreas:** may reduce with sitting upright or leaning forward
- **GI tract or esophagus:** often aggravated by swallowing or eating
- **Heart:** worsens with exertion, cold, and stress

Remote Pulmonary Assessment

- **Targeted** questioning about dyspnea, cough, wheeze, orthopnea, and exertional breathlessness¹
 - “Are you so breathless that you are unable to speak more than a few words?”
 - “Are you breathing harder or faster than usual when doing nothing at all?”
 - “Are you so ill that you’ve stopped doing your usual daily activities?”

1. Pulse Today, 2023

Remote Pulmonary Assessment (cont.)

- Incorporate **home equipment**
 - Home pulse oximeter
 - Smartphone apps for oximetry are moderately reliable¹



1. Khattak et al., 2021

Remote Pulmonary Assessment (cont.)

- Be alert for the possibility of pulmonary embolism
- **Use the Simplified Wells criteria** to guide referral urgency

Simplified Wells Criteria

Clinical symptoms of DVT	3.0
PE more likely than other diagnoses	3.0
Heart rate >100	1.5
Immobilization (≥ 3 days) or surgery in the prior four weeks	1.5
Previous DVT/PE	1.5
Hemoptysis	1.0
Malignancy	1.0

Simplified Clinical Probability

PE likely	>4.0
PE unlikely	≤ 4.0

Remote Cardiac and Peripheral Vascular Assessment

- Ask about exertional chest pain, palpitations, orthopnea, nocturnal dyspnea, and lower extremity (LE) swelling
- Jugular distension is visible via telehealth
- Leverage **home devices** and wearables to monitor heart rate, blood pressure, and rhythm¹
 - Some implantable devices transmit data to apps for objective data and monitoring

1. Alshahrani et al., 2024

Remote Cardiac and Peripheral Vascular Assessment (cont.)

Deep Vein Thrombosis (DVT)

Wells Criteria

Active cancer (treatment ongoing, within the previous six months, or palliative)	+1
Paralysis, paresis, or recent immobilization of the LE	+1
Recently bedridden for >3 days or major surgery within four weeks	+1
Localized tenderness along the deep venous system	+1
Entire lower extremity swelling	+1
Calf swelling >3 cm compared to contralateral	+1
Pitting edema confined to the symptomatic lower extremity	+1
Collateral superficial veins (non-varicose)	+1
Alternative diagnosis as likely or greater than DVT	-2

Scoring

<2 points = DVT unlikely, ≥ 2 points = DVT likely

Remote: GI and Abdominal Assessment

- Use **visual inspection** to note symmetry, distension, scars, discoloration, or pulsations¹
- **Provider-directed palpation** is valid¹
 - Divide the abdomen into quadrants and direct the patient through the assessment for tenderness, rigidity, and masses
 - A positive **rebound test** requires urgent referral
- **Coughing** can reproduce hernia pain
- **Hopping** may reproduce pain associated with appendicitis or peritonitis

1. Lu et al., 2022

Remote Endocrine Screening

- May present as atypical arthralgias, myalgias, muscle cramps, **heat or cold intolerance**, polyuria, polydipsia, visual changes, excessive sweating, and unexplained weight changes
 - Refer when musculoskeletal symptoms don't fit patterns and/or are accompanied by systemic symptoms

Remote Nervous System Screening

- Cognitive status questions
- Cranial nerve testing
- Evaluate **balance and gait**
- Coordination testing similar to in-person testing
- Sensation can be assessed via self-palpation

Psychological Screening in Telehealth

- Utilize intake forms for screening
 - PHQ-2¹
 - PHQ-4²
- Define resources for patients in crisis and establish emergency procedures if a patient reports suicidal ideation or threats of harm

1. Kroenke et al., 2003

2. Kroenke et al., 2009

Remote Musculoskeletal System Assessment

- Apply clinical guidelines for imaging referral
 - Ottawa Ankle Rules¹
 - Ottawa Knee Rule²
 - Pittsburgh Knee Rule³
 - Canadian C-Spine Rule⁴



1. Stiell et al., 1992

2. Stiell et al., 1995

3. Seaberg & Jackson, 1994

4. Stiell et al., 2001

Remote Musculoskeletal System Assessment (cont.)

Spine Assessment

- Nonmechanical LBP
 - Progressive over time despite intervention
 - Tolerates less load over time
- Patient characteristics
 - **Personal history of cancer**
 - Age over 50
 - Unexplained change in weight
 - No improvement with four to six weeks of conservative care

Remote Musculoskeletal System Assessment (cont.)

Spine Assessment

- Inflammatory arthropathies
- Classification criteria
 - Symptom onset: less than 50 years of age
 - Post-rest gel greater than 30 minutes
 - Alleviated with active movement/exercise, not with rest
 - Night pain occurs during the second half of sleep
 - Alternating buttock pain
 - If >3 criteria are present: sensitivity = 33.6%, specificity = 97.3%, + LR = 12.4

Outcomes of Telehealth Screening

- **Emergent situation identified:** Activate emergency response plan and terminate the visit as needed
- **Urgent medical referral:** Direct patient to same-day medical evaluation or ED based on risk profile
- **Treat and refer:** Continue non-urgent telehealth rehabilitation while coordinating medical assessment
- **Telehealth appropriate:** Proceed with remote plan of care and ongoing safety monitoring

Why Specific Questioning Matters

Case Example

- Established patient
 - Seen previously for LBP
 - Returns via telehealth for a “similar” flare
- Telehealth limitation
 - Weight change less noticeable on video
- Specific screening revealed
 - Nausea for >2 weeks
 - Unintentional weight loss
 - Ongoing malaise: “I feel like I might be getting sick”
- Result
 - Concern for non-MSK pathology
 - Medical referral indicated

Chapter Summary

- Telehealth screening integrates systems review and telemedicine-adapted exams to detect serious disease
- Concerning patterns of night pain, stiffness, constitutional symptoms, and visceral features guide referral urgency
- Remote assessment of pulmonary, cardiac, GI, and neurologic systems can be reliable with structured protocols
- Clear pathways for emergent, urgent, and concurrent care decisions support safe remote rehabilitation practice

Chapter 3

Emergency Response in Remote Care



Essentials for Safe Telehealth Practice

- Establish **alternative communication methods** (phone, secure messaging) before starting care¹
- Collect and verify emergency contacts for each patient at intake and periodically thereafter¹
- Record the patient's **physical location** at the start of each remote visit for EMS coordination¹
- Align telehealth emergency planning with organizational policies and local regulations¹

1. U.S. Department of Health and Human Services, 2023

Types of Emergent Situations

- **Medical emergencies** (e.g., chest pain, stroke symptoms, severe dyspnea, acute trauma)¹
- **Behavioral health crises**, including suicidal ideation or acute psychosis observed remotely¹
- Suspected **interpersonal violence**, elder abuse, child abuse, or neglect during sessions¹
- Acute **substance misuse** events impacting safety or decision-making during telehealth visits¹

1. U.S. Department of Health and Human Services, 2023

When to Activate the Emergency Response Plan

- Activate when **an immediate risk** to life, limb, or safety is suspected during a remote encounter¹
- Use **established criteria** for time-sensitive symptoms (e.g., chest pain, stroke signs, severe shortness of breath)²
- Act if the patient **cannot safely self-transport** to care or lacks local support to assist¹
- **Err on the side of safety** when uncertainty remains, especially with high-risk comorbidities³

1. U.S. Department of Health and Human Services, 2023

2. Pulse Today, 2020

3. Alshahrani et al., 2024

How to Activate the Emergency Plan

- **Calmly** inform the patient that you are initiating the emergency response and explain why¹
- Contact **local emergency services** using the patient's current location information¹
- **Engage on-site caregivers** or support persons to stay with the patient until help arrives¹
- **Document** the key timeline and actions taken during and immediately after activation¹

1. U.S. Department of Health and Human Services, 2023

Roles and Responsibilities in Emergencies

- Define who is **responsible** for activating the plan (e.g., treating clinician, triage team)¹
- Outline **team roles** for contacting EMS, notifying leadership, and documenting events¹
- Clarify **expectations for caregivers** and staff who may be physically present with the patient¹
- Ensure procedures are **easy to access** and written in direct, stepwise language¹

1. U.S. Department of Health and Human Services, 2023

Termination and Follow-Up After Emergencies

- Define when an emergency is considered terminated or mitigated (e.g., EMS arrival, handoff complete)¹
- Document outcomes and key clinical reasoning related to the emergency decision¹
- Plan follow-up visits to reassess safety and modify the telehealth care plan as indicated²
- Review events as part of quality improvement for telehealth emergency protocols²

1. U.S. Department of Health and Human Services, 2023

2. DeLaRosby et al., 2024

Chapter Summary

- Safe telehealth practice requires **a clear emergency plan** with defined triggers for activation
- Remote clinicians must recognize medical, behavioral, and safety crises that warrant immediate action
- Roles, responsibilities, and communication pathways should be standardized and rehearsed
- Structured follow-up and quality review strengthen emergency preparedness over time

Course Summary

- Telehealth screening integrates **personal, environmental, and technical factors** to determine appropriateness and safety
- Systems review detects **non-neuromusculoskeletal** and visceral pathology that requires medical referral
- Remote assessment of pulmonary, cardiac, GI, and musculoskeletal systems can be **evidence-based** and reliable with structured tools
- **Well-defined emergency procedures** ensure rapid, coordinated responses when serious events occur during remote care