

Telemedicine Video-Quality Spec Sheet

Set the quality bar by the clinical job, not the spec sheet. Latency, resolution, frame rate, degradation, and the tests that prove it. Engineering guidance, not legal advice — confirm specifics with counsel.

1 · LATENCY (the conversation budget)

- Target one-way mouth-to-ear delay \leq 150 ms (ITU-T G.114 — feels natural)
- 150–400 ms still usable, but people start talking over each other
- Budget the stages: capture + encode + network + jitter buffer + decode + render
- The jitter buffer trades a little delay for smooth audio — tune, don't remove
- Measure real delay on real networks; the demo Wi-Fi number is not the truth

2 · MATCH QUALITY TO THE CONSULT

- Med refill / check-in: 360–480p, 15–24 fps — audio is what matters
- Mental / behavioral: 480–720p, 24–30 fps — read affect and eye contact
- Primary / urgent care: 720p, 24–30 fps — general visible signs
- Dermatology / wound: 1080p+ still or photo, color accuracy — detail wins
- Tele-stroke / neuro: 720–1080p at 30 fps — smooth motion for motor/gaze

3 · SET DEGRADATION BY CLINICAL TASK

- When bandwidth drops, WebRTC sheds resolution OR frame rate — you choose
- Detail task (derm, wound, ophthalmology): degradationPreference = maintain-resolution
- Motion task (affect, tremor, gait, stroke): degradationPreference = maintain-framerate
- Use simulcast/SVC so each device gets a layer it can handle — no transcoding
- Always protect audio: spend video quality first, keep the conversation clear

4 · TEST & PROVE (on real conditions)

- Test on capped bandwidth (1, 2, 5 Mbps) and confirm the right layer is sent
- Test the mixed-device case: old phone + desktop in the same call
- Verify the picture is good enough for the specialty before you launch it
- Reliability ties to HIPAA availability of ePHI — 45 CFR 164.306(a)(1)
- Keep a phone (PSTN) fallback; audio-only telehealth is reimbursable (CMS thru 2027)

THE QUALITY MATH

A 'good enough' call is cheaper than a perfect one. Forcing 1080p on a med-refill visit at, say, 2.5 Mbps \times thousands of consults burns bandwidth and battery for a picture nobody needs — the audio carried the visit. Spend the quality where the clinical eye actually lands: a sharp 1080p still for a rash, a smooth 30 fps stream for a gait assessment, and plain audio-first video for the talk-only visit. Quality is a budget you allocate by clinical task, not a slider you push to maximum.