# Modality Architecture Cheat Sheet

Synchronous, store-and-forward, and RPM side by side - three products, three architectures.

## SYNCHRONOUS - the conversation · clock: milliseconds

| Pipeline & budget | Medicare & 2026 codes | PHI hotspot & classic mistake |
|---|---|---|
| Patient app <-> SFU + TURN <-> provider app; signaling as control plane. DTLS-SRTP on media. Budget: <=150 ms one-way audio (ITU-T G.114), <500 ms glass-to-glass. Cost center: bandwidth + reliability engineering. | Statutory telehealth - SSA 1834(m), 42 CFR 410.78. Two-way real-time audio-video required; audio-only at home needs modifier 93 and video capability. Flexibilities through 2027-12-31 (CAA 2026); behavioral at home permanent. | PHI in transit, plus recordings if you keep them. Classic mistake: shipping without TURN capacity and reconnection logic - a dropped consult is a clinical event, not an annoyance. |

## ASYNCHRONOUS (STORE-AND-FORWARD) - the queue · clock: hours to days

| Pipeline & budget | Medicare & 2026 codes | PHI hotspot & classic mistake |
|---|---|---|
| Capture + validate -> encrypted store -> review queue -> clinician -> response. No real-time constraint; integrity and audit at every step. Cost center: clinician throughput (5 min/case = ~12 cases per clinician-hour). | Mostly NOT statutory telehealth (AK/HI demos only, 410.78(d)). CTBS codes: G2010 - reply within 24 business hours; 99421-23 - 5-10 / 11-20 / 21+ min over 7 days. 40 state Medicaid programs reimburse S&F (CCHP Fall 2025). | PHI at rest: a long-lived archive of diagnosable images. Classic mistakes: photos in a storage bucket no BAA covers; no blur/exposure validation at capture - bad images surface a day later. |

## REMOTE PATIENT MONITORING - the pipeline · clock: continuous

| Pipeline & budget | Medicare & 2026 codes | PHI hotspot & classic mistake |
|---|---|---|
| Device (FDA 201(h)) -> BLE/cellular gateway -> ingest (IEEE 11073 -> FHIR Observation) -> time-series + day counter -> rules -> alerts. Cost center: the device fleet, ~$10-20 per patient-month. | Care management, not telehealth. 99453 setup; 99454 supply 16-30 days; NEW from 2026-01-01: 99445 supply 2-15 days, 99470 first 10 min; 99457/99458 20-min tiers. Automatic transmission; established patient. | PHI across the device supply chain - every hop may need a BAA. Classic mistake: counting readings instead of distinct reading-days per 30-day window - it decides 99445 vs 99454. |

### Hybrid rule

Share identity, consent, the patient record, and the audit log - keep the three pipelines separate services. Escalation paths are explicit: async intake -> live visit on red flags; RPM anomaly -> scheduled consult; live visit -> async follow-up queue.

Companion to: 'Synchronous, Asynchronous, and Remote Patient Monitoring - Three Products, Three Architectures'
www.forasoft.com/learn/telemedicine/articles-telemedicine/synchronous-asynchronous-remote-patient-monitoring




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This sheet puts synchronous, store-and-forward and RPM side by side with budgets, codes and PHI hotspots. Our seven-volume handbook covers the stack under all three: start with Volume 3 for WebRTC, TURN and QoE, then Volume 7 for real-time AI and regulation, and Volume 1 for capture and encoding.

### WHAT YOU WILL FIND INSIDE

- WebRTC, SFU and TURN for live consults
- Encoding settings for diagnostic images and video
- QoE monitoring when a dropped call is clinical
- Compliance and biometric rules for health AI

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## Planning a telehealth product that mixes live visits, async review and RPM?

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