

The First Weak Link in the Chain

Where does telephone CPR fail us?

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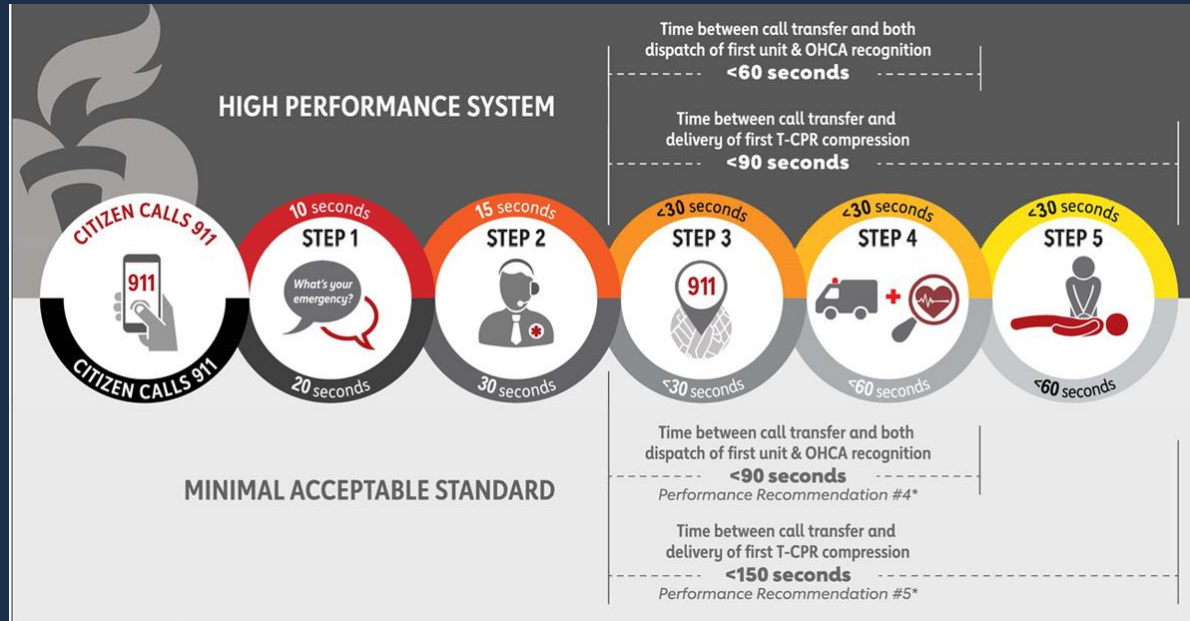


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AHA T-CPR Quality Benchmarks

Standards for Out-of-Hospital Cardiac Arrest



Why it matters: Early T-CPR is a critical link in the chain of survival. EMDs play a pivotal role in recognizing OHCA and guiding bystanders to begin compressions before EMS arrival.

Barriers to Performing T-CPR

Couldn't move patient

Caller refused

Hung up phone

Caller left phone

Overly distraught

Caller not with patient

Difficult access to patient

Language barrier

Dispatcher delays

Asks medical history questions

Asks unnecessary incident questions

Asks unnecessary breathing or consciousness questions

Not engaging caller

Asks patient age, sex, or chief complaint

How Are T-CPR Metrics Measured?

Two data sources — same metric, different methods



Audio Review

Method: Human abstractor manually reviews 9-1-1 call recordings

TTR (aTTR): Timestamped from call answer to when dispatcher verbally recognizes cardiac arrest

TTC (aTTC): Timestamped to first audible coaching of chest compressions

Strength: Clinically precise; captures nuanced dispatcher behavior

Limitation: Time-intensive; not scalable for real-time QI



CAD System (ProQA)

Method: Automated timestamps exported from ProQA dispatch software

TTR (pTTR): Logged when dispatcher assigns determinant code (9-E-1 or 9-E-2)

TTC (pTTC): Logged when CPR instructions are initiated in the protocol

Strength: Automated, scalable, available in real-time for QA/QI dashboards

Limitation: Code assignment may lag actual recognition; less granular

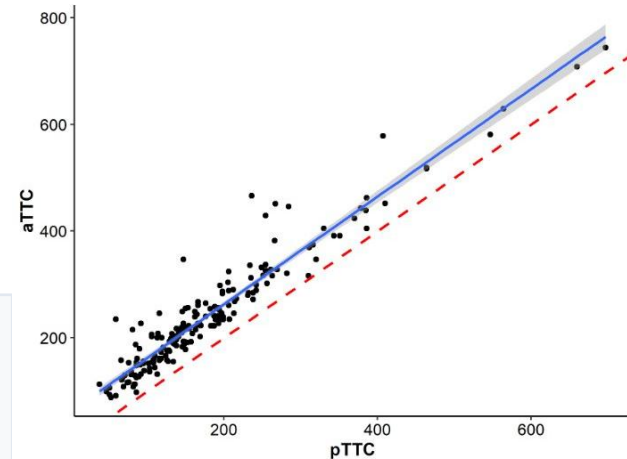
Time-to-Compressions: Strong Agreement

$$R^2 = 0.91$$

Strong correlation

(95% CI: 85.7–94.7%)

91% Variance Explained



✓ CAD reliably tracks TTC

pTTC closely mirrors aTTC across 289 cases; suitable for automated QA/QI dashboards.

CAD consistently records TTC ~60 seconds earlier than audio review predictable and correctable.

📄 AHA benchmark support

Programs can use CAD data to monitor ≤ 150 sec TTC compliance with high confidence.

Time-to-Recognition: Poor Agreement

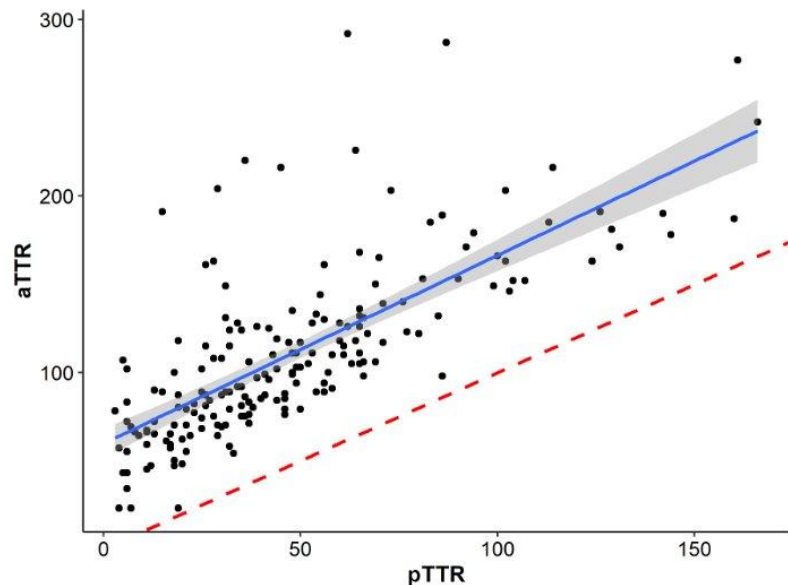
$R^2 = 0.32$

Weak correlation

(95% CI: 39.3–65.2%)

Only 32% Variance Explained

Metric	CAD Agreement (R ²)	Reliable for QA/QI?
TTC (compressions)	0.91 ✓	Yes - use CAD
TTR (recognition)	0.32 ⚠	No - requires audio



Conclusion

01

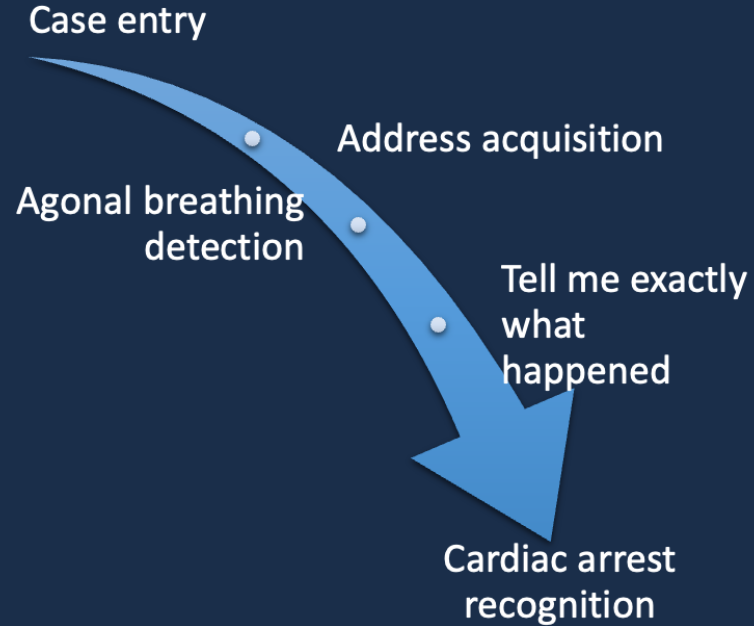
Use CAD for TTC Monitoring

02

Require Audio Review for TTR

03

Inform Dispatcher Training



VIDEO ASSISTED EMS DISPATCH



Time to Turn on the Lights



Michael Levy MD FAEMS FACP
Anchorage Alaska

VIDEO-ASSISTED EMS DISPATCH Opportunities



Transforming Emergency Response Through Real-Time Visual Intelligence

Faster Dispatch

Particularly in complex/confusing calls

↑ Accuracy

Better Triage

Every Call

Saved Lives

KEY BENEFITS OF VIDEO FOR EMS DISPATCH



Real-Time Scene Awareness

Dispatchers see what callers see injuries, hazards, patient condition before units arrive.



Improved Triage Accuracy

Visual confirmation reduces misdiagnosis, ensuring the right level of care and equipment is dispatched.



Faster Response Times

Video-guided pre-arrival instructions streamline unit assignment and reduce on-scene surprises.



Precise Location Verification

GPS + live video eliminates address confusion and confirms access points in complex environments.



Enhanced Safety for Crews

Pre-arrival hazard identification — downed lines, violence, access — keeps responders and civilians safer.



Community Bystander Guidance

Dispatchers coach bystanders in CPR or bleeding control via video, dramatically improving survival rates.

THE EVIDENCE

1.64x

Higher odds of good
neurological outcome

2x

Survival to discharge
vs. audio-only DA-CPR

5%

Reduction in highest-urgency
Better triage

78%

Dispatcher survey completion
rated video easy to use

CPR Quality Improvement with Video

- Correct CPR hand position improved from 11.6% to 43.5% after video guidance
- Compression rate improved ~18.5 compressions/min vs. audio-only
- Video reduced 'unclear problem' call classifications, improving resource allocation
- HEMS dispatchers used video to stand down unnecessary helicopter deployments (14/19 calls)

- Lee et al. (2025). Video vs. audio DA-CPR, n=35,471 OHCA. Resuscitation. PubMed 41655734
- Imbriaco et al. (2022). Meta-analysis V-DA-CPR vs. C-DA-CPR. PMC8812740
- JAMA Network Open (2025). RCT video streaming EMS dispatch, n=18,745. PMC12215568

- Linderoth et al. (2021). Live video from bystanders' smartphones. Resuscitation 168:35–43
- Møller et al. (2024). Dispatcher survey, Denmark. BMC Health Serv Res. PMC11577824
- Zakariassen et al. (2019). Video for HEMS dispatch. Scand J Trauma. PMC6505217

Barriers



Dispatcher Buy-in

Concern about seeing things for which we are emotionally unprepared

New education/training/workflow



Legal concerns

This will always be brought up

Will need to provide governance structure for how/if video is stored/who has access



Cost

No solution will be free at this point

The Future is Now: Multiple Platforms are Available

Prepared integrates Emergency SOS Live Video



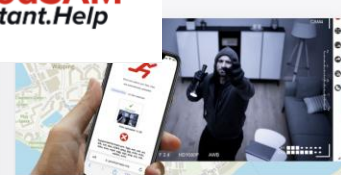
Instant Video

Instantly open the caller's phone camera while maintaining the call. No apps required and no camera needed in dispatch or the PSAP.



Instant Location

The caller's location is immediately conveyed along with their direction of travel and speed. Lat/Lng, easting/northing and what3words are all supported.



Instant Media Upload

Instantly upload images and videos from anyone's mobile phone or computer. Media can be immediately forwarded to others.



Instant Chat

For situations where the caller can't convey an audio or video call, instant text-based chat provides a critical communication channel.



Instant Consultation

Video consult across multiple devices for diagnosis, interviews and witness statements.



92% Accurate

HR = 56

Vital Signs

An exclusive artificial intelligence system that measures pulse rate through the live video feed.