A Standardized Template for Measuring and Reporting
Telephone Cardiopulmonary Resuscitation

A Thesis submitted to the University of Arizona College of Medicine - Phoenix
in partial fulfillment of the requirements for the Degree of Doctor of Medicine

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Class of 2014

Mentor: Dr. Bentley Bobrow MD
Dedicated to my wife Ashley for her hard work ensuring that I worked at all.

“As usual, there is a great woman behind every idiot.” – John Lennon
I humbly acknowledge the following persons for their contribution to my project’s success:

Dr. Bentley Bobrow
Micah Panczyk
Paula Brazil
Jeff Tully

Mesa Fire Department
Abstract

**Background:** Bystander cardiopulmonary resuscitation (CPR) improves out-of-hospital cardiac arrest (OHCA) survival. Telephone CPR (TCPR) comprises CPR instruction given by emergency dispatchers to bystanders responding to OHCA and the CPR performed as a result. TCPR instructions improve bystander CPR rates, but the quality of the instructions varies widely. No standardized system exists to critically evaluate the TCPR intervention.

**Methods:** Investigators developed a novel, standardized system to analyze audio recordings of suspected OHCA calls from a large regional 9-1-1 dispatch center. As the initial step of a TCPR quality improvement initiative, baseline data were obtained from October 2010 to November 2011. Dispatcher recognition of CPR need, delivery of TCPR instructions, and bystander CPR performance were documented.

**Results:** A total of 590 calls were analyzed. CPR was indicated in 317 calls and already in progress in 94. Dispatchers recognized the need for TCPR in 176 of the 223 (79%) remaining calls. CPR instructions were started in 65/223 (29%) and bystander CPR resulting from TCPR instructions was started in 31/223 (14%). Median time intervals were: recognition of CPR need [69s (IQR: 44, 104.5)], initiation of CPR instructions [175s (IQR: 139, 207)], and first chest compression [251s (IQR: 189, 306)].

**Conclusion:** It is feasible to employ a simple data collection and reporting system for critical evaluation of the TCPR intervention. A standardized methodology for measuring TCPR is necessary to perform on-going quality improvement, to establish performance standards, and for future research on how to optimize bystander CPR rates and OHCA survival.
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Introduction

Bystander initiated cardiopulmonary resuscitation (CPR) has been shown to increase survival, however it is performed in less than half of all out-of-hospital cardiac arrests (OHCA). Dispatch-assisted CPR, also known as Telephone CPR (TCPR), has been shown to double rates of bystander CPR and provides an opportunity to systematically increase bystander CPR rates and survival on a large scale.

TCPR instruction is defined as real-time CPR guidance offered to callers by emergency dispatchers or other trained call-takers. The goal is to provide bystanders with “just-in-time” instructions to:

1) Identify whether the victim is in cardiac arrest and
2) Instruct the bystander to perform CPR prior to the arrival of trained rescuers.

Many believe that one of the system factors responsible for the enormous variability in OHCA outcomes across communities is the quality and timeliness of the TCPR process.

The purpose of this paper is to describe the development and application of descriptive terms, a codified measurement tool, and a standardized reporting format for assessing the quality of TCPR. The measurement tool and reporting template were applied to baseline data prior to a dedicated quality improvement initiative. The goal is to promote on-going provider and system-level feedback, system-to-system comparisons and to aid in answering important research questions that might improve the critical intervention of TCPR.
Research Methods

Study Population and Setting

Audio recordings of emergency dispatch calls were obtained from a large regional combined fire and law enforcement dispatch center serving a population of approximately 712,000 people in Arizona. The agency registered 40,118 medical calls in 2011.

This agency participates in the Save Hearts in Arizona Registry and Education (SHARE) Program which has been previously described in detail and includes a voluntary Utstein-style OHCA EMS database linked with in-hospital post-arrest process and outcome data from hospitals. SHARE includes data as part of a statewide cardiac arrest quality-improvement initiative sponsored by the Arizona Department of Health Services and the University of Arizona. The SHARE Program has created measurement tools modeled after the Utstein OHCA template to allow epidemiologic, clinical, and outcomes analyses of OHCA and TCPR. [www.azshare.gov] Here we report TCPR baseline data that serves as a benchmark from which to measure improvements in process metrics after the agency adopted a formal quality-improvement program. The impact of such gains on patient outcomes can be subsequently gauged by linking process data with prehospital and hospital records.

Data Collection

Dispatch center personnel voluntarily reviewed all medical calls recorded from October 1, 2010 to November 6, 2011. Personnel used the search term “code” to identify potential OHCA calls that were dispatched using the agency’s Computer Aided Dispatch (CAD) system [Incident Management, version 8.1.3, Intergraph, Huntsville, AL]. A total of 590 call recordings that matched the search criteria were obtained and analyzed. Call date/time and unique response “run” numbers, corresponding to each call, were entered into an Excel spreadsheet [Excel v14.5, Microsoft Redmond, WA]. As part of the ongoing TCPR quality improvement initiative, TCPR data were linked to EMS and hospital outcome data. OHCA has been designated a major public health problem by the Arizona Department of Health Services. SHARE is the designated public health program created to measure response to OHCA and improve outcomes. Thus, the SHARE
Program initiatives and its data collection are exempt from the Health Insurance Portability and Accountability Act. By virtue of SHARE being a health department–sponsored public health initiative, the Arizona Department of Health Services’ Human Subjects Review Board and the University of Arizona Institutional Review Board have determined that neither the interventions nor their evaluation constitutes human subjects research and have approved the publication of de-identified data.

Call Processing

Investigators developed and utilized an electronic web-based 21-element data collection tool (Appendix 1.0) to capture relevant dispatcher/bystander interaction data in cases of suspected OHCA. Examples of data elements include: victim status assessment, dispatcher recognition of CPR need, delivery of TCPR instructions, and the verification of performance or non-performance of bystander CPR. The descriptions and definitions of the 21 data elements are given in Appendix 1.1.

The indication for performing CPR was defined as the bystander reporting that the victim was not conscious and was not breathing “normally.” Not breathing normally was defined as the caller describing either complete absence of breathing, agonal breathing or a rapid or slow respiratory rate. Investigator identification of audible agonal breaths was also considered not breathing normally. Calls where CPR was in progress or initiated spontaneously by bystanders were excluded from key metric percentage and time analysis. TCPR instructions are defined as any portion of dispatcher-to-bystander communication that detailed the delivery of either chest compressions and/or rescue breaths. Performance of bystander TCPR was defined as any chest compressions delivered to the victim in response to TCPR instructions (i.e., ventilations without chest compressions were not counted as TCPR performed).

Audio recordings were analyzed using QuickTime. [Version v.10, Apple Inc. Cupertino, CA] Relevant data elements were recorded in the secure, web-based MySQL data collection system and stored in encrypted form on password-protected Windows 2008 servers only accessible to approved IP addresses. Six key performance metrics were derived from the current American
Heart Association (AHA) dispatch CPR scientific statement and European Resuscitation Council (ERC) resuscitation guidelines\textsuperscript{10-11}:

1) Median elapsed time interval from call receipt to dispatcher recognition of CPR need (time zero defined as the second at which the caller was acknowledged by the call-taker on the recording).
2) Median elapsed time interval from time zero until start of CPR instructions.
3) Median elapsed time interval from time zero until first chest compression actually performed by bystander.
4) Percent of TCPR-indicated calls where need for CPR was recognized dispatch.
5) Percent of TCPR-indicated calls where TCPR instructions were started.
6) Percent of TCPR-indicated calls where bystander TCPR was started.

A standardized reporting template was developed (Appendix 1.3) and was modeled after the Utstein template for reporting OHCA data.\textsuperscript{12} This simple template was designed to:

1) Support efficient reporting of the six key metrics
2) Serve as the basis for comparing performance among dispatch centers
3) Provide the future bases for analyzing the association between the key metrics and patient outcomes
4) Develop benchmark targets and best-practices for dispatch centers.

**Statistical Analysis**

To assess inter-rater reliability, a set of 25 randomly-selected calls from the recording database were analyzed by each member of the data collection team. Randomization was achieved through the arbitrary selection of a start point in the database and collection of 25 sequential calls from that start point for analysis. Statistical analysis [SAS, version 9.3, SAS, Cary, NC] was performed on the results to investigate the level of agreement of the cases and data elements as well as reproducibility between investigators. The Agreement Coefficient (AC1) and inter-class correlation coefficient (ICC) was calculated utilizing the definition “the probability of two
raters agreeing for cause, based on all ratings except those associated with subjects that may produce an agreement by pure chance."13-18
Results

TCPR Data

A total of 590 9-1-1 calls were analyzed (Fig. 1). From these, 367 were excluded: 139 due to barriers preventing CPR (dangerous environment, physically incapable, etc.), 94 for CPR already in progress, 90 for CPR not being indicated (e.g., conscious and/or breathing normally), 42 for victim status changes (e.g., awakens during call), and 2 for incomplete call recordings. This left 223 calls where CPR was indicated (study group). Dispatchers recognized the need for CPR in 176 calls (79%) and failed to recognize the need in 47 calls (21%). TCPR instructions were given in 29% (65/223) of calls and bystander CPR was started in 14% (31/223) (Table 1). TCPR instructions were given in 37% (65/176) of calls in which CPR need was recognized by the dispatcher and 48% (31/65) of victims received CPR when the bystander received TCPR instruction.

The median time interval to dispatcher recognition of CPR need from the start of the call was 69 seconds [Q1=44s Q3=104.5s] (Table 1). The median time interval from start of call to initiation of CPR instructions was 175 seconds [Q1=139s Q3=207s]. The median time from start of call to initiation of first compression was 251 seconds [Q1= 189s Q3=306s].
Excluded Total N = 367
   - Barriers N = 139
   - CPR in Progress N = 94
   - CPR not Indicated N = 90
   - Status Change N = 42
   - Incomplete recording N = 2

CPR Indicated N = 223

CPR Need Not Recognized N = 47

TCPR Instructions Not Started N = 111

TCPR Instructions Started; No CPR N = 34

TCPR Instructions Started N = 65

TCPR Instructions Given; Compressions Performed N = 31

Total Calls Reviewed N = 590

CPR Need Recognized N = 176
### Key TCPR Performance Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
<th>Interquartile Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Elapsed Time Before Dispatcher Recognition of CPR Need</td>
<td>69s</td>
<td>[Q1=44 Q3=104.5]</td>
</tr>
<tr>
<td>Median Elapsed Time Before Start of TCPR Instructions</td>
<td>175s</td>
<td>[Q1=139 Q3=207]</td>
</tr>
<tr>
<td>Median Elapsed Time Before First Chest Compression</td>
<td>251s</td>
<td>[Q1=189 Q3=306]</td>
</tr>
<tr>
<td>Percentage of TCPR Indicated Calls Need for CPR Recognized by Dispatch</td>
<td>79%</td>
<td>(176/223)</td>
</tr>
<tr>
<td>Percentage of TCPR Indicated Calls TCPR Instructions Started</td>
<td>29%</td>
<td>(65/223)</td>
</tr>
<tr>
<td>Percentage of TCPR Indicated Calls Bystander TCPR Started</td>
<td>14%</td>
<td>(31/223)</td>
</tr>
</tbody>
</table>
Inter-Rater Reliability

Analysis of the level of agreement and reproducibility of appraising TCPR between investigators is shown below (Table 2).
<table>
<thead>
<tr>
<th>Metric</th>
<th>Correlation Coefficient</th>
<th>P-Value</th>
<th>Agreement Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Elapsed Time Before Dispatcher Recognition of the Need for CPR</td>
<td>0.895</td>
<td>0.00</td>
<td>Near Perfect Agreement</td>
</tr>
<tr>
<td>Median Elapsed Time Before the Start of TCPR Instructions</td>
<td>0.917</td>
<td>0.00</td>
<td>Near Perfect Agreement</td>
</tr>
<tr>
<td>Median Elapsed Time Before the First Compression</td>
<td>0.989</td>
<td>0.00</td>
<td>Near Perfect Agreement</td>
</tr>
</tbody>
</table>
Discussion

Our objective was to develop a standardized method by which 9-1-1 call centers can collect and analyze data generated during TCPR calls. We found that this method of data collection could be used for both provider and system-level quality improvement in such a way as to apply the concepts and recommendations given in the 2012 AHA Scientific Statement and 2010 ERC resuscitation guidelines.10-11 To our knowledge this is the first attempt to create such a standardized reporting template.

Bystander CPR has a powerful impact on survival from OHCA but public CPR training alone has not resulted in the majority of citizens being able and willing to perform CPR.8 9-1-1 emergency dispatchers and call-takers frequently have the opportunity to help bystanders recognize cardiac arrest and perform CPR and are a vital link in the chain of survival.4, 19 The combination of both strategies likely offers the best chance of increasing overall bystander CPR rates. Additionally, because time to initiating CPR and defibrillation are closely related to survival after cardiac arrest, the times to recognition and initiating TCPR instructions are likely clinically important. Thus the quality of TCPR instructions (% events recognized, time to initiation and time to first chest compression) are important data to accurately measure.

The current variability in the implementation and measurement of the TCPR intervention may be, in part, responsible for the large disparities which exist in outcomes. Simply measuring the performance of TCPR (yes/no), without evaluating the time frames and quality of the instruction process, may not be an accurate measure of the effectiveness of TCPR. For example, a dispatcher who helps get chest compressions started 7 minutes after receipt of an emergency call may have far less benefit on outcome compared to starting CPR 1 minute after call receipt. Yet both callers received TCPR instructions.

An effective evaluation of TCPR entails listening to OHCA call recordings. The extreme variability in circumstances surrounding each call also requires clear definitions that are standardized and yet flexible enough to be adapted to unique events. While the large number of circumstances is a challenge to standardization, we created a data collection tool (Appendix 1.0) and data dictionary that specifically defined each element (Appendix 1.1). We realize that in very large
dispatch centers and centers with very limited resources, analyzing every OHCA call recording may not be feasible. In such cases, it may be practical to analyze at least a representative and meaningful subset of suspected OHCA calls to allow ongoing assessment of dispatch center performance.

While some local measurement systems exist, currently there are no standardized terminology, definitions, or methodology to track and evaluate these process measures, thus limiting intra-agency benchmarking and inter-agency comparisons, formation of performance standards, and future research. We believe that a standardized reporting template (similar to Utstein) is needed to enable the evaluation of each emergency CPR call and the performance of call centers longitudinally. Our proposed TCPR reporting template was not intended to be exhaustive, but rather concise and easily applied by a broad range of 9-1-1 call centers. It encompasses six definable, accessible, and reproducible “key” TCPR metrics: 1) elapsed time to recognition of need for CPR, 2) time to start of TCPR instructions, 3) time to first chest compression, 4) proportion of calls where need for CPR was identified, 5) proportion of calls where CPR instructions were given, and 6) proportion of calls where bystander CPR was performed (Table 2). Thus allowing thorough evaluation of the entire process and understanding of where lapses or delays in the TCPR process may be occurring.

We chose this particular 9-1-1 emergency call center because it did not previously have a structured TCPR measurement or quality improvement process, but was able and willing to help develop one. In this preliminary evaluation of 223 calls, dispatchers failed to recognize the need for CPR in 21% of cases. In calls that were recognized, identification of the need for CPR took a significant amount of time (median 69s, IQR: 44, 104.5). TCPR instructions were initiated in 29% (65/223) of calls where instructions were indicated. Even though recognition typically occurred in just over a minute, the median time interval from the start of the call until the initiation of CPR instructions was nearly 3 minutes (median 175s, IQR: 139, 207). Bystander TCPR was provided in 14% (31/223) of indicated cases and was typically initiated long after the start of the call (median 251s (IQR: 189, 306). In response to the findings reported in this paper,
these data were subsequently used in a comprehensive dispatch center TCPR protocol revision and training initiative.
Future Directions

The creation of these reporting tools and process standardization is a natural foundation for the application of such metrics to improve cardiac arrest survival rates in the pre-hospital setting. The application of new interventions of dispatcher training, technical advances, and layperson education can now be measured and reported by these tools to identify potential areas of improvement for individual dispatch centers as well as target centers and/or individual dispatchers to improve TCPR delivery.

The next immediate steps to be taken is to link the prehospital TCPR data using the methods described in this paper to known cases of OHCA treated in hospital. Such a linkage would allow survival impact data, and help identify if interventions such as changing how TCPR is delivered improves patient morbidity and mortality.

Additional work could also include the universalization of these tools for application nationally or internationally. This broader application would allow for a larger data collection and strengthen these tools by applying them to dispatch centers with alternative protocols. Additionally input from additional centers would allow these tools to function as QI, improving individual centers across the globe.
Conclusion

We describe the development, application and assessment of inter-rater reliability of a standardized TCPR measurement tool that can be used to evaluate an EMS system’s process for providing TCPR. Future study is required to evaluate whether this tool can be widely used at other centers and has the potential to aid systems in increasing the rate of bystander CPR and to improve OHCA outcomes.
References


3) Lester CA, Donnelly PD, Assar D. Lay CPR trainees: retraining, confidence and willingness to attempt resuscitation 4 years after training. Resuscitation 2000; 45: 77-82.


# Appendix

## 1.0 Web-based Data Collection Tool

<table>
<thead>
<tr>
<th>Dispatch Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispatch Agency:</td>
</tr>
<tr>
<td>Date/Time of Call:</td>
</tr>
</tbody>
</table>

**Transfer Call?**
- [ ] Yes
- [x] No
- [ ] Unknown

**If yes, time elapsed before dispatcher first addressed caller?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**Was this a cardiac arrest before arrival of EMS?**
- [ ] Yes
- [x] No
- [ ] Unknown

**If applicable, please note the address of arrest location:**

**CPR already in progress?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**CPR instructions started?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**Cardiopulmonary Resuscitation (CPR) was performed?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**Barriers to CPR (Check all that apply):**
- [ ] Hanging up phone
- [ ] Caller left phone
- [ ] Caller refused
- [ ] Other (please specify):
- [ ] Language barrier
- [ ] Device malfunction
- [ ] Couldn’t access patient

**If barrier(s) occurred, was CPR delayed?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**If barrier(s) occurred, was CPR not started?**
- [ ] Yes
- [ ] No
- [ ] Unknown

<table>
<thead>
<tr>
<th>Dispatch Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult:</td>
</tr>
<tr>
<td>Child:</td>
</tr>
<tr>
<td>Infant:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dispatch Time Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispatcher Recognition for CPR:</td>
</tr>
<tr>
<td>Dispatcher Time Instructed:</td>
</tr>
<tr>
<td>Time to First Compressions:</td>
</tr>
<tr>
<td>Time to First Rescue Breaths:</td>
</tr>
</tbody>
</table>

**Dispatch Comments:**

**Coaching or compliments for dispatcher?**

**Other Comments?**

---

[Save Dispatch]
1.1 Data Dictionary

1. DISPATCH AGENCY

Definition:

- This is the agency that dispatched the call.

Description:

- The Dispatch Agency can receive the call directly or from a Transfer Agency. The Dispatch Agency provides whatever pre-arrival instructions are needed and sends medical units to the event location.

Instructions for Coding:

- Spell out the full name of the agency or use a standardized abbreviation. Please choose one or the other.
- Upper case letters are preferred.
- Do not use periods, commas, or semicolons.

Examples:

<table>
<thead>
<tr>
<th>Dispatch Agency Fully Spelled Out</th>
<th>Dispatch Agency Identified By Standard Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESA REGIONAL DISPATCH CENTER</td>
<td>MRDC</td>
</tr>
<tr>
<td>PHOENIX REGIONAL DISPATCH CENTER</td>
<td>PRDC</td>
</tr>
</tbody>
</table>

2. DATE AND TIME OF CALL

Definition:

- This is the date and time the call was received at the Dispatch Agency. If no date and time are given by time stamp, they can be retrieved from the agency’s Computer Aided Dispatch (CAD) or alternate record keeping system.

Description:

- The date of the call is essential for a continuous quality improvement program that aims to track changes in process data through time. Combined with the time the call was received, it also helps link dispatch and pre-hospital records in cases where incident numbers between such records do not match.
Instructions for Coding:

- Enter the date according to the following format: MM/DD/YYYY
- Enter the time according to the following format: HH:MM:SS

Examples:

<table>
<thead>
<tr>
<th>Date of Call</th>
<th>Time of Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/23/2013</td>
<td>11:22:14</td>
</tr>
</tbody>
</table>

3. INCIDENT NUMBER

Definition:

- This is the number sequentially assigned to the call by the Dispatch Agency’s CAD.

Description:

- The Incident Number serves as a call’s unique identifier within a Dispatch Agency. It is usually sufficient for linking dispatch and pre-hospital records.
- **Not nullable.** A unique value must be provided to create a unique record ID within the database.

Instructions for Coding:

- Enter the Incident Number assigned to the call.

Examples:

<table>
<thead>
<tr>
<th>Incident #</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234</td>
<td>Four (4) number incident #</td>
</tr>
<tr>
<td>123456</td>
<td>Six (6) number incident #</td>
</tr>
<tr>
<td>AB6468</td>
<td>Incident # with letters and numbers</td>
</tr>
<tr>
<td>000000123456789</td>
<td>Incident # with more than 6 characters with preceding “0”s.</td>
</tr>
</tbody>
</table>
4. INCIDENT ADDRESS

Definition:

- The street address (or best approximation) where the patient arrested. In the event that the patient arrested after the 911 call was placed, the street address of the patient when the 911 call was placed should be recorded as the Incident Address.

Description:

- Street address can be used to map the location of the cardiac arrest using GIS technology and to identify patterns and clusters of cardiac arrest events.
- The ability to use GIS technology and to map cardiac arrest events is dependent upon the accuracy of the cardiac arrest address. For this reason, USPS standards are recommended for the coding of the address. The full document of these standards can be found at the USPS website (http://pe.usps.gov/cpim/ftp/pubs/Pub28/pub28.pdf).
- In EMS systems where the event number recorded by the transport agency differs from the call incident number, street address can be helpful for matching dispatch, pre-hospital and hospital records. It is not necessary to record the street address in EMS systems where the transport and call incident numbers are the same.

Instructions for Coding:

- Fully spell out street addresses using standard USPS abbreviations. These abbreviations include, but are not limited to: ALY (alley), ANX (annex), APT (apartment), AVE (avenue), BLDG (building), BLVD (boulevard), BYP (bypass), CIR (circle), CT (court), CV (cove), DEPT (department), DR (drive), EXPY (expressway), FL (floor), HTS (heights), HWY (highway), JCT (junction), LBBY (lobby), LN (lane), LOOP (loop), MNR (manor), MTWY (motorway), OFC (office), PARK (park), PH (penthouse), PIKE (pike), PKWY (parkway), PL (place), PLZ (plaza), RAMP (ramp), RD (road), RDG (ridge), RM (room), RTE (route), SPUR (spur), SQ (square), ST (street), STE (suite), TER (terrace), TRCE (trace), TRL (trail), WAY (way), UNIT (unit), N (north), NE (northeast), NW (northwest), S (south), SE (southeast), SW (southwest), E (east), W (west).
- Uppercase letters are preferred.
- Use the “&” or “+” sign for indicating an intersection address.
- Do not use the “#” sign if there is an address unit designator such as APT, SUITE, or RM.
- Do not use periods, commas, or semicolons in the address.

Examples:

<table>
<thead>
<tr>
<th>Code</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>102 MAIN ST SW APT 12</td>
<td>Apartment #12 at “102 Main Street Southwest”</td>
</tr>
<tr>
<td>CLIFTON RD NE &amp; N DECATUR RD NE</td>
<td>Intersection of “Clifton Road Northeast” and “North Decatur Road Northeast”</td>
</tr>
</tbody>
</table>
5. **TRANSFER CALL**

**Definition:**

1. A call is coded as a Transfer Call when the recording includes audio from an agency that first receives and then relays the call to the Dispatch Agency for processing.

**Description:**

- Many recordings include audio from Primary Safety Answering Points (PSAPS), agencies that initially receive and then transfer calls to a Dispatch Agency. These PSAPS are usually law-enforcement agencies transferring calls to “Secondary PSAPS,” or fire/medical dispatching agencies.

**Instructions for Coding:**

- If a recording includes audio from a PSAP, mark the circle next to “Yes” under “Transfer Call?” on the Telephone CPR Data Form.
- If a recording does not include audio from a PSAP, mark the circle next to “No”.
- If it isn’t clear whether the recording includes audio from a PSAP, mark the circle next to “Unknown”.
- If the call is coded as a Transfer Call, note in minutes and seconds the time elapsed from the start of the recording (time 0:00 in Apple QuickTime window) to the moment when a dispatcher at the Dispatch Agency first addresses the caller.

**Examples:**

<table>
<thead>
<tr>
<th>If a Transfer Call</th>
<th>If not a Transfer Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Yes</td>
<td>O Yes</td>
</tr>
<tr>
<td>O No</td>
<td>O No</td>
</tr>
<tr>
<td>O Unknown</td>
<td>O Unknown</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If a Transfer Call, Time Elapsed Before Dispatcher First Addressed Caller</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:17</td>
</tr>
</tbody>
</table>
6. WAS THIS A CARDIAC ARREST BEFORE ARRIVAL OF EMS?

Definition:

A suspected cardiac arrest is confirmed or not confirmed by Emergency Medical Technicians when they assess the patient’s status upon arrival.

Description:

- Call-takers and dispatchers may mis-identify medical events as cardiac arrests based on a caller’s description. Only calls linked to EMT-confirmed cardiac arrests should evaluated for quality-improvement purposes.

Instructions for Coding:

- Information for coding this entry is derived from EMS run sheets that match the call Incident Number or, barring an Incident Number match, share a date and time and/or address suggesting a probable match.
- If a call represents a confirmed cardiac arrest, mark the circle next to “Yes” under “Was this a cardiac arrest before arrival of EMS?”
- If a call does not represent a confirmed cardiac arrest, mark the circle next to “No.”
- If it isn’t known whether the call represents a confirmed cardiac arrest, mark the circle next to “Unknown.”

Example:

<table>
<thead>
<tr>
<th>If a Cardiac Arrest</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Yes</td>
</tr>
<tr>
<td>O No</td>
</tr>
<tr>
<td>O Unknown</td>
</tr>
</tbody>
</table>

7. CPR ALREADY IN PROGRESS?

Definition:

- CPR is “already in progress” when callers indicate that they or other lay or trained rescuers on scene have started CPR before the dispatcher starts instructions for CPR.

Description:

- Calls where CPR is already in progress should be excluded from aggregate calculations of average or median times to dispatcher recognition of the need for CPR, time to start of dispatcher instructions, and time to first compression. These calls can be included when calculating the fraction of calls where dispatchers start CPR instructions, however (dispatchers may or may not provide instructions/coaching to rescuers already performing CPR).
Instructions for Coding:

- If CPR is known to start before a call-taker or dispatcher start instructions for CPR, mark the circle next to “Yes” under “CPR already in Progress?”
- If CPR does not start before a call-taker or dispatcher starts instructions for CPR, mark the circle next to “No.”
- If it isn’t known whether CPR started before a call-taker or dispatcher started instructions for CPR, mark the circle next to “Unknown.”

Example:

<table>
<thead>
<tr>
<th>If a CPR in progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Unknown</td>
</tr>
</tbody>
</table>

8. CPR INSTRUCTIONS STARTED?

Definition:

- CPR instructions, whether for compression-only CPR or for conventional CPR (CPR with rescue breathing) are considered “started” if they are simply started, even if they are not finished.

Description:

- Instructions to get a patient to a hard, flat surface should not be considered the start of CPR instructions. In many protocols, instructions begin when a call-taker or dispatcher tells the rescuer to “kneel by the patient’s side” after the patient is on a hard, flat surface.

Instructions for Coding:

- If CPR instructions are started, mark the circle next to “Yes” under “CPR instructions delivered?”
- If CPR instructions are not started mark the circle next to "No."
- If it isn’t known whether CPR instructions were started, mark the circle next to “Unknown.”
Examples:

<table>
<thead>
<tr>
<th>CPR instructions were started</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>O No</td>
<td></td>
</tr>
<tr>
<td>O Unknown</td>
<td></td>
</tr>
</tbody>
</table>

9. CHEST COMPRESSIONS PERFORMED?

Definition:

- Chest compressions are considered “performed” if a rescuer does any chest compressions, even if the rescuer stops just after starting.

Description:

- Determining whether chest compressions are performed can be difficult in a minority of cases. Rescuers don’t always count out their compressions, and sometimes their voices or the compressions themselves are inaudible.

Instructions for Coding:

- If chest compressions were performed, mark the circle next to “Yes” under “Chest Compressions Performed?”
- If chest compressions were not performed, mark the circle next to "No."
- If it isn’t known whether chest compressions were performed, mark the circle next to “Unknown.”

Examples:

<table>
<thead>
<tr>
<th>Chest compressions were performed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>O No</td>
<td></td>
</tr>
<tr>
<td>O Unknown</td>
<td></td>
</tr>
</tbody>
</table>
10. BARRIERS TO CPR?

Definitions:

- Barriers to CPR are defined as obstacles that delay or prevent the start of CPR Instructions and/or bystander chest compressions. They include:
  - Hang up phone: This is when the caller disconnects from the dispatcher or call-taker processing the call
  - Language barrier: This when the caller and dispatcher do not speak the same language and therefore can’t communicate effectively.
  - Caller left phone: This is when the Caller leaves the phone for purposes other than rendering aid to the patient after speaking with the dispatcher or call-taker
  - Overly distraught: This is when a caller’s highly-distressed emotional state delays or prevents him or her from taking CPR instructions and/or performing CPR
  - Caller refused: This is when a dispatcher or call-taker suggests or instructs CPR and a caller refuses for reasons other than a physical inability to perform CPR
  - Couldn’t move patient: This is when a caller reports his or her inability to move the patient to a hard, flat surface from an unsuitable location for CPR (eg, toilet or bed)
  - “Other”: Any barrier apart from those defined above that delays or prevents the start of CPR instructions and/or bystander chest compressions

Description:

- Barriers to CPR are important to track because the recurrence of given barriers can point the way to protocol changes addressing high-frequency obstacles. For example, a common barrier is that rescuers can’t move a patient from a bed to a hard, flat surface where compressions could be effective. Knowing this, managers and medical directors can experiment with protocol language and procedures to help rescuers solve this problem.
- Multiple barriers can delay or prevent the start of CPR in any one call.

Instructions for Coding:

- Check the box next to the appropriate item under “Barriers to CPR” according to the definitions above.
Examples:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The caller, a native Spanish speaker, speaks and understands English poorly. The dispatcher knows little Spanish, but is able to get the caller to do CPR after several minutes of trying to clarify his instructions.</td>
<td>Code as a delay to start of CPR resulting from “Language barrier”</td>
</tr>
<tr>
<td>The dispatcher tries to calm an hysterical caller, but the caller screams and then leaves the phone. The caller is heard screaming in the background until EMTs arrive.</td>
<td>Code as “Overly distraught” and “Caller left phone”</td>
</tr>
<tr>
<td>A dispatcher tells the caller that she needs to start CPR and that he will help her. The caller refuses, however, saying she has hurt her back and that there is no way she can get the patient from the bed to the floor.</td>
<td>Code as “Other” (and what that “other” barrier was: physical inability). The caller has refused to take CPR instructions but for reasons owing to a physical inability to perform (her bad back) Code as “Couldn’t move patient”</td>
</tr>
</tbody>
</table>

11. **PATIENT IS ADULT, CHILD, INFANT?**

Definitions:

- A patient is defined as an Adult if he or she is nine years old or older
- A patient is defined as a Child if he or she is between one and eight years old
- A patient is defined as an Infant is he or she is less than one year old

Description:

- Patient age is important because it structures the kind of CPR dispatchers and call-takers should prescribe. While CPR on an infant and CPR on a child both involve chest compressions and rescue breaths, CPR on an Infant and CPR on a Child are distinct and different treatments. In the large majority of cases, dispatchers and call-takers should provide instructions for compression-only CPR for adults suspected to be in cardiac arrest.

Instructions for Coding:

- Mark the circle next to the appropriate age group in the “Dispatch: Patient” section of the QA form.
### Examples:

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Patient Age as</th>
</tr>
</thead>
<tbody>
<tr>
<td>The caller says her husband is, “passed out, snoring and unresponsive.”</td>
<td>“Adult,” as indicated by the fact that the patient is the caller’s “husband.”</td>
</tr>
<tr>
<td>The teacher from a pre-school calls in reference to an unresponsive student on the playground.</td>
<td>“Child.”</td>
</tr>
<tr>
<td>A teacher from an elementary school calls in reference to an unresponsive student on the playground. No other information about the student’s age is provided.</td>
<td>“Unknown.” The patient may be either a child or an adult.</td>
</tr>
</tbody>
</table>

### 12. PATIENT IS CONSCIOUS?

**Definition:**

- A patient is considered conscious if the caller reports the patient is conscious and/or responsive to the caller. A patient is considered not conscious if the caller reports the patient is not conscious and/or is not responsive to the caller.

**Description:**

- A patient’s level of consciousness is a key indicator of whether he or she is in cardiac arrest. It can be difficult to get a clear answer on whether the patient is conscious. Callers often give contrary answers to this question at different times in the call. Type-appropriate CPR instructions should be given when a patient is deemed not conscious and not breathing normally.

**Instructions for Coding:**

- Mark the circle next to the appropriate answer (“Yes,” “No,” or “Unknown”) under “Conscious?” on the “Dispatch: Patient” section of the QA form.
Examples:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The caller says her husband is “passed out and not responding.”</td>
<td>Mark the “No” circle, coding the patient as not conscious.</td>
</tr>
<tr>
<td>The caller does not commit in answering whether the patient is conscious, saying “yes” at one point, “no” at another and “I can’t tell” at another. The dispatcher asks if she can speak with the patient. The caller says, “No, there’s no way he can talk to you.”</td>
<td>If the caller reports that the patient can’t speak, it indicates the patient is most likely not conscious. Mark the “No” circle, coding the patient as not conscious.</td>
</tr>
<tr>
<td>A caller says the patient is in a seizure. The seizure then stops, and the caller reports that the patient “is snoring like he’s in a deep sleep and he won’t wake up.”</td>
<td>A patient who “won’t wake up” should be classified as not conscious. Mark the circle next to “No”, coding the patient as not conscious.</td>
</tr>
<tr>
<td>The caller reports the patient wouldn’t wake up a minute ago, but now appears to be “getting better.” The dispatcher tells the caller to shake the patient’s shoulders to see if the patient responds. The caller says he moaned and pushed her arms away.</td>
<td>A patient who makes purposeful movement (pushing the caller’s arms away) is demonstrating conscious intent and should be coded as conscious. Mark the circle next to “Yes”.</td>
</tr>
</tbody>
</table>

13. **PATIENT IS BREATHING NORMALLY?**

**Definition:**

- A patient is considered to be breathing normally if the caller reports the patient is breathing normally. A patient is considered to be breathing not normally if the caller reports the patient is (A) not breathing or (B) the caller reports abnormal breathing and/or (C) the Quality Assurance (QA) rater hears abnormal breathing and/or identifies it through the caller’s description of the patient’s breathing. Abnormal breathing is defined as breathing with a rate and/or character different from the victim’s normal breathing at rest.
Description:

- A patient’s breathing status is a key indicator of whether he or she is in cardiac arrest. It can be difficult to get a clear answer on whether the patient is breathing normally. Callers often give contrary answers to this question at different times in the call. Agonal breathing is very common in cardiac arrest. Callers often use specific words or phrases to describe this kind of breathing. These descriptions include, but are not limited to, “gasing,” “gasing for air,” “gurgling,” “gargling,” “snoring,” “snorting,” “humming,” “moaning,” “groaning,” “breathing every once in a while” and “shallow breathing.” Type-appropriate CPR instructions should be given when a patient is deemed not breathing normally and not conscious.

Instructions for Coding:

- Mark the circle next to the appropriate answer (“Yes,” “No,” or “Unknown”) under “Breathing Normally?” on the “Dispatch: Patient” section of the QA form. In cases where callers describe agonal breathing or where the quality assurance rater hears agonal breathing, patients should be coded as not breathing normally.

Examples:

<table>
<thead>
<tr>
<th>The caller says her husband is drunk and that he keeps “gurgling and gasping for air.”</th>
<th>The descriptors “gurgling and gasping for air” indicate agonal breathing. Even if the caller suspects it’s just because her husband is drunk, mark the “No” circle, coding the patient as not breathing normally.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The caller says his wife “seems to be breathing okay,” but the quality assurance rater hears a soft snoring sound in the background. The dispatcher does not hear it or hears it but does not identify it as abnormal breathing.</td>
<td>Mark the “No” circle, coding the patient as not breathing normally.</td>
</tr>
</tbody>
</table>

14. DISPATCH RECOGNIZES NEED FOR CPR

Definition:

- The time dispatch recognizes the need for CPR is the time elapsed from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment when the dispatcher or call-taker indicates that he or she realizes CPR should be performed.
Description:

- Dispatcher and call-taker recognition of the need for CPR is the first of three key time intervals in the provision of pre-arrival CPR instructions.

- Dispatchers and call-takers indicate their recognition when they say any of the following in connection with a response to the patient’s condition: “Cardiopulmonary Resuscitation,” “CPR,” “chest compressions,” “compressions,” “continuous chest compressions,” “Hands-Only CPR,” “CCR,” “rescue breaths,” “rescue breathing,” “ventilations,” or “rescue ventilations.”

- If the dispatcher or call-taker indicates his or her recognition, but subsequently instructs the caller or rescuer either to “lift the patient’s chin and tilt his or her head back” and/or “to look, listen and feel for breathing,” the time to dispatch recognition of the need for CPR should be defined as the moment the dispatcher or call-taker indicates his or her recognition AFTER instructing the caller or rescuer to perform this formal breathing assessment.

Instructions for Coding:

- Enter in minutes (“MM”) and seconds (“SS”) the elapsed time from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment of dispatch recognition of the need for CPR.

Examples:

<table>
<thead>
<tr>
<th>The dispatcher says, “We need to start CPR right away.”</th>
<th>Enter the time elapsed to the moment when the dispatch says “CPR.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dispatcher says, “We need to start CPR” at 1 minute and 27 seconds into the call. She then instructs the caller to lift the patient’s chin, tilt his head back and to look, listen and feel for breathing. The caller performs this procedure. It takes 25 seconds, and at 1:52 the dispatcher says, “Ok, let’s start compressions.”</td>
<td>Enter 1:52 as the time to dispatch recognition of the need for CPR.</td>
</tr>
<tr>
<td>The patient is on the floor and the caller describes him as “not conscious” and “not breathing normally.” A second later, at 55 seconds, the dispatcher then says, “Kneel by his side and put the palm of one hand in the center of his chest. Put your other hand on top of that hand.”</td>
<td>The dispatcher has not said “CPR” or anything synonymous. He has launched directly into the start of CPR instructions. In this case, the time elapsed to dispatch recognition is the same as the time elapsed to the start of dispatch instructions: 55 seconds.</td>
</tr>
</tbody>
</table>
15. DISPATCHER BEGAN INSTRUCTIONS

Definition:

• This is the time elapsed from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment when the dispatcher or call-taker starts CPR instructions.

Description:

• The time at which a dispatcher or call-taker starts CPR instructions is the second key time interval in the provision of pre-arrival instructions. This method for assigning this time will vary from dispatch center to dispatch center, depending on the wording of protocols. Instructions to get a patient to a hard, flat surface should not be considered the start of CPR instructions. In many protocols, instructions begin when a call-taker or dispatcher tells the rescuer to “kneel by the patient’s side” after the patient is on a hard, flat surface.

Instructions for Coding:

• Enter in minutes (“MM”) and seconds (“SS”) the elapsed time from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment the dispatcher or call-taker starts CPR instructions.

Examples:

<table>
<thead>
<tr>
<th>The dispatcher has recognized the need for CPR, and the caller reports that the patient is now on the on the floor. The dispatcher says, “OK – kneel by his side” at 2 minutes and 12 seconds and then goes on to finish instructions for CPR.</th>
<th>Enter 2:12 as the time at which the dispatcher began instructions for CPR.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR is already in progress at the time a call is received. The dispatcher asks the caller to tell the rescuer to count the compressions out loud. The rescuer counts out loud, and it becomes evident that he is performing compressions too slowly. The dispatcher then corrects the rate at :57 seconds, telling the caller to tell the rescuer to go faster.</td>
<td>Though CPR was already in progress, the dispatcher began CPR instructions at :57 seconds. Enter this as the time the dispatcher began instructions.</td>
</tr>
</tbody>
</table>
16. TIME TO FIRST COMPRESSION

Definition:

- This is the time elapsed from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment when the caller or rescuer delivers the first chest compression.

Description:

- The time to first compression is the third of three key time intervals in the provision of pre-arrival CPR instructions. The time is noted when the first compression is audible or the caller/rescuer indicates he or she has started compressions (i.e. by counting with dispatcher).

Instructions for Coding:

- Enter in minutes (“MM”) and seconds (“SS”) the elapsed time from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment the caller or rescuer delivers the first chest compression. There are often calls in which the time to first compression must be carefully inferred or entered as “Unknown.”

Examples:

<table>
<thead>
<tr>
<th>The dispatcher finishes instructions for starting compressions, and the caller clearly counts out the first compression at 3 minutes and 23 seconds into the call.</th>
<th>Enter the time elapsed to first compression as 3:23.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dispatcher finishes instructions for CPR at 2 minutes and 50 seconds into the call and tells the caller to count the compressions out loud. The caller doesn’t count, however, and, eight seconds later, at 2:58, the dispatcher asks, “Are you doing the compressions?” The caller says, “Yes.” The dispatcher then reminds the caller to count out loud, and the caller begins: “1, 2, 3 …”</td>
<td>In this scenario, it becomes clear that the caller is doing CPR at 2:58 seconds (the caller says, “Yes” when asked if he’s doing compressions.) The dispatcher told him to count out loud at 2:50. Since 8 seconds later the caller said he had been doing compressions, it can be reasonably inferred that the first compression occurred somewhere between 2:51 and 2:55. In the absence of more perfect information, enter the elapsed time as 2:53, the midpoint between 2:51 and 2:55.</td>
</tr>
<tr>
<td>The dispatcher finishes instructions for CPR and tells the caller to count out loud at 1 minute and 46 seconds. The caller doesn’t count, but the first of a string of audible compressions occurs at 1:49.</td>
<td>Enter the time elapsed to first compression as 1:49.</td>
</tr>
</tbody>
</table>
17. **TIME TO FIRST RESCUE BREATH**

**Definition:**
- This is the time elapsed from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment when the caller or rescuer delivers the first rescue breath.

**Description:**
- The time to first rescue breath is noted when the first rescue breath is audible or can be reasonably inferred.

**Instructions for Coding:**
- Enter in minutes ("MM") and seconds ("SS") the elapsed time from the start of the call (or, in the case of a Transfer Call, the time elapsed from the moment the dispatcher or call-taker first addresses the caller) to the moment the caller or rescuer delivers the first rescue breath. If not audible, the quality assurance rater must infer it carefully using his or her best judgment or enter the time as “Unknown.”

**Examples:**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Recorded Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dispatcher gives instructions on performing rescue breaths after the caller finishes the first round of 30 compressions. The first breath is audible at 2 minutes and 19 seconds.</td>
<td>Enter the time elapsed to first rescue breath as 2:19.</td>
</tr>
<tr>
<td>The dispatcher finishes instructions on performing rescue breaths after the caller finishes the first round of 30 compressions. The caller puts down the phone at 3 minutes and 3 seconds to give the breaths. The breaths are not audible. The caller picks up the phone for additional instructions at 3:15. The dispatcher asks, “Did you deliver the breaths?” The caller says, “Yes.”</td>
<td>In this scenario, the caller gave the breaths sometime between 3:03 and 3:15. It is reasonable to assign the time of first ventilation, then, at 3:09, the midpoint between 3:03 and 3:15.</td>
</tr>
</tbody>
</table>
18. COACHING OR COMPLIMENT FOR DISPATCHER

Definition:
- Coaching refers to any advice a manager or colleague could give the dispatcher or call-taker based on his or her performance in a given audio recording. Compliments refers to any positive comments a manager or colleague could give the dispatcher or call-taker based on his or her performance.

Description:
- Coaching dispatchers and call-takers on select audio recordings is essential for improving their performance on suspected cardiac arrest calls. Call evaluators should listen for any clues to recognition of cardiac arrest a dispatcher or call-taker may have missed (eg, agonal breathing or descriptions of agonal breathing). They should also evaluate how assertive the dispatcher or call-taker was in getting instructions started once he or she identified the need for CPR. It is equally important to point out those things a dispatcher or call-taker does well when handling a suspected cardiac arrest call.

Instructions for Coding:
- Enter free text comments.

Examples:

<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dispatcher missed an audible agonal breath 54 seconds into the call. Identifying it could have accelerated the</td>
</tr>
<tr>
<td>time to recognition of the need for CPR.</td>
</tr>
<tr>
<td>The dispatcher missed descriptions of agonal breathing. The caller said the patient was “gasping” at 1 minute and</td>
</tr>
<tr>
<td>was “breathing really hard” at 1:15.</td>
</tr>
<tr>
<td>The dispatcher identified the need for CPR quickly, but asked if the caller wanted to do CPR instead of telling</td>
</tr>
<tr>
<td>him, “We need to start CPR.” This likely enabled the caller to refuse CPR instructions.</td>
</tr>
<tr>
<td>The dispatcher calmed and reassured a highly-distressed caller and got him to perform CPR until EMTs arrived.</td>
</tr>
</tbody>
</table>
19. OTHER COMMENTS?

Definition:

- Other Comments refers to any thoughts the QA evaluator may have with respect to research and process improvement ideas.

Description:

- Patterns that emerge when evaluating audio recordings can lead to research and process improvement ideas.

Instructions for Coding:

- Enter free text comments.

Examples:

<table>
<thead>
<tr>
<th>Dispatchers tend not to listen as closely as possible to callers’ descriptions of patients when first receiving calls. Callers often indicate that the patient is an adult and is not conscious in the first few seconds of a call (eg, “My husband is passed-out on the floor”), but dispatchers often miss these indications. Several seconds later they ask the patient’s age and whether he or she is conscious. The time to recognition of the need for CPR could be considerably reduced if dispatchers caught this kind of information when callers first provide it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It would be interesting to know if the time to dispatch recognition of the need for CPR varied according to whether dispatchers ask if the patient is “conscious” instead of “responsive,” and vice-versa.</td>
</tr>
</tbody>
</table>
1.3 TCPR Reporting Template

Key TCPR Performance Metrics Reporting Table

| Metric                                              | Value Description       | Time Unit | Quartiles
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Elapsed Time Before Dispatcher Recognition of the Need for CPR</td>
<td>Time in Seconds</td>
<td>[Q1= Q3=]</td>
<td></td>
</tr>
<tr>
<td>Median Elapsed Time Before the Start of TCPR Instructions</td>
<td>Time in Seconds</td>
<td>[Q1= Q3=]</td>
<td></td>
</tr>
<tr>
<td>Median Elapsed Time Before the First Compression</td>
<td>Time in Seconds</td>
<td>[Q1= Q3=]</td>
<td></td>
</tr>
<tr>
<td>Percentage of calls where Need for CPR was Recognized by Dispatch</td>
<td>%</td>
<td>(X/X)</td>
<td></td>
</tr>
<tr>
<td>Percentage of Calls where TCPR Instructions were Started</td>
<td>%</td>
<td>(X/X)</td>
<td></td>
</tr>
<tr>
<td>Percentage of 911 Calls where Bystander TCPR was Provided</td>
<td>%</td>
<td>(X/X)</td>
<td></td>
</tr>
</tbody>
</table>