

# *Cardiac Arrest Registry to Enhance Survival - CARES*

Condensed Data Dictionary and Coding Manual for EMS Agencies:  
Essential Instructions for Abstracting and Coding Data Elements

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**CARES PROJECT – EMS DATA SET  
ESSENTIAL DATA ELEMENTS**

<b>Item #</b>	<b>Data Item</b>	<b>Best / Alternate Data Source</b>	<b>Comments (page)</b>
1	Address of Cardiac Arrest	EMS Trip Sheet	3
2-6, 28	Patient Information	EMS Trip Sheet	3-4
7	EMS Agency ID	EMS Trip Sheet	4
8	Date of Cardiac Arrest	EMS Trip Sheet	4
9	Cardiac Arrest Call Number	EMS Trip Sheet	5
10	Booklet ID Number	HealthEMS® Trip Sheet only	5
11	Fire/First Responder Service	Dispatch/CAD Record, Trip Sheet	5
12	Hospital Destination	EMS Trip Sheet	5
13	Time Elements (dispatch, ROSC, CPR, etc..)	EMS Trip Sheet (Estimate)	6
14	Location Type	EMS Trip Sheet	6
15	Arrest, Witnessed	EMS Trip Sheet / Crew member(s)	6
16	Arrest After Arrival of Responding EMS	EMS Trip Sheet / Crew member(s)	7
17	Presumed Cardiac Arrest Etiology	EMS Trip Sheet / Crew member(s)	7
18	Resuscitation Attempted by EMS Personnel	EMS Trip Sheet	7
20	Who Initiated CPR	EMS Trip Sheet / Crew member(s)	8
21	Was an AED Used During Resuscitation	EMS Trip Sheet	8
22	Who First Applied AED, Monitor/Defibrillator	EMS Trip Sheet	9
23	First Arrest Rhythm of Patient	EMS Trip Sheet / Crew member(s)	9
24	Return of Spontaneous Circulation (ROSC)	EMS Trip Sheet / Crew member(s)	9
25	Sustained Return of Spontaneous Circulation	EMS Trip Sheet	9
26	Out of Hospital Disposition	EMS Trip Sheet / Crew member(s)	10
27	End of Event	Crew member(s) / EMS Trip Sheet	10

**CARES PROJECT DATA SET - ESSENTIAL VARIABLES**

**GENERAL INSTRUCTIONS**

- For the CARES project, EMS is defined as the providers that respond to the 911 call AND are capable of transporting the patient to the hospital. All other responding providers that are involved in patient care but DO NOT transport the patient to the hospital will be considered “First Responders”.
- To minimize missing and unknown data, please complete a cardiac arrest registry form for each and every arrest patient with presumed cardiac etiology, regardless of whether the patient was transported as long as resuscitation efforts were initiated. This will help to establish a meaningful cardiac arrest database.

**1. ADDRESS - REQUIRED**

**General Instructions for Coding**

- This is the address where EMS was directed to respond to the arrest event, whether or not the arrest occurred enroute the hospital.
- All elements of the address are crucial to identify the response intervals from the CAD system.
- All addresses should include two lines.
- The address should be fully spelled out using standard USPS abbreviations (see Appendix B)
- Uppercase letters are preferred on all lines of the address.
- Do not use punctuation
- Spell city names in their entirety.

**Examples:**

<b>Standardized Address</b>	<b>Definition</b>
102 MAIN ST SW APT 12 ATLANTA GA 30303	Spelled out fully, use capital letters, use standard abbreviations, do not use punctuation, place a space between letters and numbers
UNKNOWN ATLANTA GA 30303-1231	Street address unknown, city and zip+4 known. Hyphen is OK in zip code+4
1600 CENTRAL PL BLDG 14 UNKNOWN GA	Street address and state known, city and zip code unknown

**2, 3. PATIENT NAME – WHERE AVAILABLE**

**Description**

- Patient name is essential for location outcome information from the hospital.
- If patient name is unknown, list as “John/Jane Doe”.
- This information can be obtained from the patient care report (PCR).
- This information is protected in confidence and should not be withheld based on HIPAA concerns; please contact the CARES Project Coordinator (CPC) or your agencies CARES liason for questions.
- When the CARES data is complete and verified with matching hospital data the patient name will be “scrubbed” from the registry to de-identify the record completely.

**4. PATIENT AGE/PATIENT UNITS – WHERE AVAILABLE**

**Description**

- Allows for categorization of the patient according to their age at the time of cardiac arrest when used in conjunction with patient age units.

**Instructions for Coding**

- The actual or estimated age of a patient should be recorded. If a child is less than one year, enter the number of months, or days. If older than one year do not enter months.
- If the patients age is not know it should be estimated and recorded.
- Both “Patient Age” must be filled in and “Patient Age Units” must be coded.
- If a child is less than one year, enter the number of months, or days. If older than one year do not enter months.

Code	Definition
001	One day, one month or one year when combined with “Patient Age Units”.
011	Eleven days, 11 months or 11 years when combined with “Patient Age Units”
120	One hundred and 20 days or 120 years. If the age is 120 days the age could also be recorded as 004 with the “month” code for “Patient Age Units”
999	Unknown, must correspond with “9” for “Patient Age Units”.

**5. DATE OF BIRTH – WHERE AVAILABLE**

- All dates are entered with 8 digits in the following form, MMDDYYYY.
- Do not leave any component, month, day, or year, of the date blank.

Code	Example	Definition
MMDDCCYY	07252004	July 25, 2004

**6. GENDER - REQUIRED**

- Coded as male or female.

**7. EMS AGENCY ID – REQUIRED**

- EMS Agency ID used is the three digit code recognized by the local/state EMS office.
- This field should appear automatically for the online version of data entry.

**8. DATE VARIABLES - REQUIRED**

- All dates are entered with 8 digits in the following form, MMDDYYYY.
- Do not leave any component, month, day, or year, of the date blank.

Code	Example	Definition
MMDDCCYY	07252004	July 25, 2004

9. **CALL NUMBERS - REQUIRED**

- Number that EMS agencies use to identify the call as a unique event within their system.
- Enter all six digits for call number.
- If less than 6 digits, start with initial '0's'

Code	Examples	Definition
IIIII	012345	Call number 12345
IIIII	123456	Call number 123456

10. **BOOKLET ID NUMBERS – WHERE APPLICABLE**

- This number is only for EMS agencies that use a HealthEMS® ePCR form for standard patient documentation
- Enter all nine digits for booklet ID number.
- If less than nine digits, start with initial '0's'

Code	Examples	Definition
IIIII	012345678	Call number 12345678
IIIII	123456789	Call number 123456789

11. **FIRE/FIRST RESPONDER – WHERE APPLICABLE**

- Corresponds to the 4 digit Georgia State EMS list for officially recognized First Responder organization.
- See Appendix B for listing of State list specific to First Responder agencies for Fulton County.

12. **DESTINATION HOSPITAL – REQUIRED (IF TRANSPORTED)**

- The hospital that the patient was transported to.
- The hospital name should correspond to the hospital code for the particular jurisdiction.
- Hospital codes will be found in Appendix C.

**13. TIME VARIABLES – WHERE AVAILABLE**

**General Instructions for Coding**

- These are *approximations* to help identify the time set in the CAD system. These are not used for establishing statistical intervals.
- Time should be recorded in military time in the following form, HH:MM:SS for all EMS dispatch times.
- Time should be recorded in military time in the following form, HH:MM for all resuscitation times, (Time of first CPR, CPR stopped/termination time, Time of 1<sup>st</sup> defib) HH:MM (not seconds).

**Examples:**

Code	Examples	Definition
HH:MM:SS	01:23:45	Twenty three minutes and 45 seconds after 1 o'clock in the morning
HH:MM	16:30	Four thirty in the afternoon

**ARREST INFORMATION**

**14. LOCATION TYPE - REQUIRED**

**General Instructions for Coding**

- Location that the cardiac arrest occurred, not necessarily, the origin of the transport if the subject was moved after the arrest.
- If any doubt exists about the general categories listed below, refer to the detailed definitions in (Appendix D).

Code	Definition	Example
01	Home/Residence	Front Yard
02	Public Building	Krogers
03	Street/Hwy	Corner of Peachtree and 14 <sup>th</sup> Street
04	Nursing Home/Assisted Living Center	Shady Grove Nursing Home
05	Residence/Institution.	Shady Grove Children's Home
06	Physician Office / Medical Clinic	Shady Grove Free Clinic
07	Educational Institution	Shady Grove High School
08	Hospital	Shady Grove Community Hospital
09	Recreation/Sport Facility	Shady Grove Softball Field
10	Industry	Shady Grove Mattress Factory
11	Farm	Clover Leaf Cattle Farm
12	Mine/Quarry	Hard Rock Limestone Quarry
13	Jail	Shady Grove County Jail
14	Airport	Shady Grove International Airport
15	Other	In flight between Shady Grove airport and Atlanta airport

**15. ARREST WITNESSED - REQUIRED**

- A witnessed arrest is one that is seen or heard by another person, or an arrest that is monitored. If the patient was found after an uncertain period of time and not either seen or heard to collapse, then the arrest is considered an unwitnessed arrest.

16. **ARREST AFTER EMS ARRIVAL - REQUIRED**

- Did the arrest occur after the arrival of EMS personnel?

Code	Definition
YES	Yes, patient was both awake and responsive or had a pulse upon arrival of EMS but monitored rhythm or loss of pulse as assessed by EMS indicated cardiac arrest during EMS treatment.
NO	No, patient was in cardiac arrest when EMS arrived.

17. **PRESUMED CARDIAC ARREST ETIOLOGY - REQUIRED**

- An arrest is presumed to be of cardiac etiology unless it is known or likely to have been caused by trauma, submersion, drug overdose, presumed poisoning/overdose, asphyxia, exsanguinations, or any other non-cardiac cause as best determined by rescuers.
- This field allows for categorization based on evidence to suggest that the arrest was caused by a non-cardiac etiology. This will allow for the best chance of identifying patients that are otherwise presumed to have a primary cardiac etiology and help establish an true cardiac etiology survival rate (Utstein) for a community.

**RESUSCITATION INFORMATION**

18. **RESUSCITATION ATTEMPTED BY EMS - REQUIRED**

- A resuscitation attempt is defined as the act of attempting to maintain or restore life by establishing or maintaining airway (or both), breathing, and circulation through CPR, defibrillation, and other related emergency care techniques.
- When EMS personnel perform CPR or attempt defibrillation, it is recorded as resuscitation attempted by EMS personnel.

Code	Definition
YES	Yes, EMS personnel performed CPR or attempted defibrillation.
NO	No, EMS personnel did NOT perform CPR or attempt defibrillation

20. **WHO INITIATED CPR - REQUIRED**

- Cardiopulmonary resuscitation, CPR, is an attempt to restore spontaneous circulation by performing chest compressions with or without ventilation.
- Bystander CPR is CPR performed by a person who is not responding as an organized emergency response system approach to a cardiac arrest. Physicians, nurses, and paramedics may be described as medical provider if they are not part of the emergency response system involved in the victim's resuscitation.
- Identifies the initial person to perform CPR. CPR or defibrillation being delivered defines a treated cardiac arrest patient.

Code	Definition
1	Bystander (layperson not known to be a family member)
2	Bystander Family Member (layperson known to be family member)
3	First Responder Fire/Police
4	Responding EMS personnel
5	Medical provider (off duty on scene, not part of responding EMS personnel)
6	Other
7	CPR not attempted
8	Missing
9	Unknown

21. **WAS AN AED USED DURING RESUSCITATION - REQUIRED**

- The machine would need to have the pads applied to the patient with a minimum of one analysis performed, regardless of whether or not a shock is indicated.
- # of AED shocks used to indicate defibrillation attempts with an AED or monitor that is in AED mode.
- # of Manual shocks used to indicate defibrillation attempt with trained personnel monitoring rhythm.

Code	Definition
YES	Yes, AED was present and attached for one analysis.
NO	No, AED was neither present nor used.
AED Present but not Used	AED was available (ie, on wall or floor) but not attached to the patient for one analysis.
AED Malfunctioned	AED was attached but malfunctioned during analysis attempt.

22. **WHO FIRST APPLIED MONITOR/DEFIBRILLATOR, AED**

- Identifies the individual who was responsible for using the AED during the resuscitation.
- To determine the frequency of lay person, first responder and EMS use of AEDs during resuscitations

Code	Definition
Not Applicable	If field #20 was “NO” or “AED PRESENT BUT NOT USED”
Bystander	Bystander applied AED
Bystander, family member AED	Bystander, family member applied AED
First Responder Fire/Police AED	First Responder Fire or Police applied AED
EMS AED or Monitor/Defibrillator	EMS applied AED or Monitor/Defibrillator
ALS First Responder Monitor/Defibrillator	If First Responder was equipped with monitor/defibrillator AND provided ALS personnel to monitor rhythm for rhythm analysis.

**FIRST CARDIAC ARREST RHYTHM OF PATIENT AND ROSC INFORMATION**

23. **FIRST ARREST RHYTHM OF PATIENT - REQUIRED**

- The first monitored rhythm is the first cardiac rhythm present when a manual (monitor/defibrillator) or AED (automated external defibrillator) is attached to a patient *after cardiac arrest*.
- The initial rhythm that the patient was found to be in as indicated by EMS personnel. For the purposes of uniform reporting, the Utstein group classifies a deflection on the surface ECG < 1mm amplitude (calibrated 10 mm/mv) as asystole; 1 mm or more is ventricular fibrillation
- The first monitored rhythm recording (strip) needs to be attached at the bottom of the cardiac arrest registry sheet.

24. **ANY RETURN OF SPONTANEOUS CIRCULATION (ROSC) - REQUIRED**

- ROSC is defined as documentation in the trip sheet of a brief (approximately > 30 seconds) restoration of spontaneous circulation that provides evidence of more than an occasional gasp, occasional fleeting palpable pulse, or arterial waveform.

25. **SUSTAINED RETURN OF SPONTANEOUS CIRCULATION - REQUIRED**

- Sustained ROSC is deemed to have occurred when chest compressions are not required for 20 consecutive minutes and signs of circulation persist.
- If a patient has a subsequent loss of spontaneous circulation after “Sustained ROSC” this subsequent arrest is NOT coded as a new event. After the cardiac arrest event that resulted in the initial 911 call all subsequent arrests after ROSC are considered part of the initiating event.

26. **OUT OF HOSPITAL DISPOSITION - REQUIRED**

- This variable will be used to quantify the number of patients who had resuscitation terminated in the field and which patients were transported to the hospital.
- The final destination of the patient at the end of the EMS call.

Code	Definition
1	Resuscitation not initiated at scene due to obvious signs of death, DNR, resuscitation considered futile, or resuscitation is not required (eg. The patient shows signs of circulation).
2	Resuscitation terminated at scene due to medical control order, protocol/policy requirements completed, return of spontaneous circulation
3	Transported to Hospital with or without return of spontaneous circulation.

27. **END OF EVENT - REQUIRED**

- **Important: This field propagates the request for additional data from the hospital (if “ongoing resuscitation in the ED” has been selected.**
- The event defined by this variable is the resuscitation attempt.
- A resuscitation event is deemed to have ended when death is declared or spontaneous circulation is restored and sustained for 20 minutes or longer.

Code	Definition
1	Dead in Field; patient expired without being transported.
2	Pronounced Dead in ED; patient was in cardiac arrest when EMS arrived and, following transfer of patient to hospital, EMS had knowledge that resuscitation efforts were terminated by ED staff.
3	Ongoing resuscitation in ED; whether or not the patient had a pulse upon arrival, the patient was continuing in receive care by hospital staff at time of EMS departure from hospital. Note: this includes patients with sustained ROSC, who have no impairment whatsoever, but had experienced cardiac arrest during this event.

<b>Detailed LOCATION Definitions</b>	
<b>Code</b>	<b>Definition</b>
01	<u>Home/Residence</u> - Includes apartment, boarding house, farmhouse, home premises, residential house, and non-institutional place of residence, private driveway, private garage, private garden, private home, and private walkway, swimming pool within a private residence or garden, and yard of home. <u>Excludes</u> home under construction but not occupied or institutional place of residence. (See <u>Industry</u> )
02	<u>Public Building</u> -Includes any building used by the general public, including airport, bank café, casino, church, cinema, clubhouse, courthouse, dance hall, parking garage, hotel, market, movie theater, music hall, nightclub, office building, opera house, post office, public hall, broadcasting station, restaurant, commercial shop, bus or railway station, store, or theater. <u>Excludes</u> home garage (see <u>Home/Residence</u> ) or industrial building or workplace. <u>Excludes</u> state, public and private schools (see <u>Educational Institution</u> ) and physician’s offices. (See <u>Physician Office/Medical</u> )
03	<u>Street/Hwy</u> - Includes all public roadways.
04	<u>Nursing Home/Assisted Living Center</u> -Includes all medical residential institutions that are licensed by the State as a nursing home or assisted-living center.
05	<u>Residence/Institution</u> - Children’s home, dormitory, orphanage.
06	<u>Physician Office / Medical Clinic</u> - Doctor offices, free standing clinics (other than one meeting the definition of “Hospital”).
07	<u>Educational Institution</u> - Includes state, public and private schools. <u>Excludes</u> playground, gymnasium, and other recreational locations within educational institutions. (See <u>Recreation/Sports Facility</u> ).
08	<u>Hospital</u> - Hospitals, Medical Centers or other recognized medical facilities of similar type.
09	<u>Recreation/Sport Facility</u> - Includes amusement park, baseball field, basketball courts, beach resort, cricket ground, football field, golf course, gymnasium, hockey field, holiday camps, ice palace, lake resort, mountain resort, playgrounds including school playground, public parks, racecourses, resorts of all types, riding school, rifle range, seashore resorts, skating rink, sports ground, sports palace, stadium, public swimming pool, tennis court, vacation resort. <u>Excludes</u> occurrences in private house, private garden, private swimming pool, and private yard. (See <u>Home/Residence</u> ).
10	<u>Industry</u> - Includes building under construction, dockyard, dry dock, factory building or premises, garage (place of work), industrial yard, loading platform in factory or store, industrial plant, railway yard, shop (place of work), warehouse, and workhouse.
11	<u>Farm</u> - Includes farm buildings and land under cultivation. <u>Excludes</u> farmhouse and home premises of farm (See <u>Home/Residence</u> ).
12	<u>Mine/Quarry</u> - Includes gravel pit, sand pit, or tunnel under construction.
13	<u>Jail</u> - Facility where persons are in custody of the judicial system.
14	<u>Airport</u> – Any location designated for routine travel by flight.
15	<u>Other</u> - Is to be used when location is not included in the above categories.

APPENDIX B

Georgia First Responder Codes

Region	County	Name of Service	PCR #
3	Fulton	Atlanta Fire Department	802
3	Fulton	City of Alpharetta - Alpharetta Fire Department	801
3	Cobb	City of Austell Fire Department	803
3	Fulton	City of College Park Fire Department	808
3	Fulton	City of East Point Fire Department - First Responder	811
3	Clayton	City of Forest Park Fire/EMS Services	867
3	Fulton	City of Hapeville Fire Department	871
3	Clayton	City of Morrow Fire Department	870
3	Clayton	Clayton County Emergency Medical Services	858
3	Cobb	Cobb County Fire and Emergency Services	806
3	Dekalb	Dekalb County Department of Fire and Rescue Services	810
3	Douglas	Douglas County Fire Department/ Emergency Medical Services	156
3	Cobb	Elite Emergency Medical Services, LLC	362
3	Dekalb	Emory University First Responder Unit EMS	833
3	Fulton	Event & Motorsports EMS ( MFR)	882
3	Fulton	Fulton County Fire Department	815
3	Cobb	Georgia EMS Ambulance	319
3	Gwinnett	Gwinnett County Fire and Emergency Services	872
3	Cobb	Marietta Fire and Emergency Services	820
3	Newton	Med One Emergency Medical Services, Inc.	375
3	Fulton	MedStat Emergency Medical Service, Inc.	234
3	Clayton	Riverdale Fire Services	850
3	Fulton	Roswell Fire and Rescue Department	825
3	Cobb	Six Flags First Aid	851
3	Cobb	Smyrna Fire Rescue	826
3	Fulton	Union City Fire Department	830

APPENDIX C

Georgia Destination Hospitals

<b>Destination</b>	<b>Destination Code</b>
Atlanta Medical Center	709
Children's at Egleston	416
Children's at Scottish Rite	518
Dekalb Medical Center	720
Emory Adventist Hospital	641
Emory Crawford Long Hospital	705
Emory Eastside Medical Center	534
Emory University Hospital	706
Fayette Community Hospital	200
Grady Memorial Hospital - Atlanta	710
Gwinnett Medical Center	366
Henry General Hospital	532
Hughes Spalding Children's Hospital	750
Joan Glancy Memorial Hospital	226
Newnan Hospital	515
Newton General Hospital	322
North Fulton Medical Center	327
Northlake Regional Medical Center	173
Northside Hospital	634
Northside Hospital Forsyth	346
Peidmont Hospital	617
Rockdale Hospital	240
South Fulton Medical Center	630
Southern Regional Medical Cent	547
St Josephs Hospital of Atlanta	714
Tanner Medical Center – Carrollton	435
Tanner Medical Center - Villa Rica	244
VA Medical Center - Atlanta	715
Wellstar Cobb Hospital & Medical Center	546
Wellstar Douglas General Hospital	312
Wellstar Kennestone Hospital	615
Wellstar Paulding Memorial Medical Center	151

APPENDIX D

<b>US Postal Service Standard Abbreviation</b>			
<b>Address</b>	<b>Abbreviation</b>	<b>Address</b>	<b>Abbreviation</b>
Apartment	APT	Plaza	PLZ
Avenue	AVE	Park	PARK
Building	BLDG	Parkway	PKWY
Boulevard	BLVD	Road	RD
Circle	CIR	Room	RM
Court	CT	South	S
Department	DEPT	Southeast	SE
Drive	DR	Southwest	SW
East	E	Square	SQ
Floor	FL	Street	ST
North	N	Suite	STE
Northeast	NE	Unit	UNIT
Northwest	NW	West	W