Hospital User Guide

Cardiac Arrest Registry to Enhance Survival (CARES)





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CARES WEBSITE:



The CARES website hosts a number of useful documents for program stakeholders. A summary of the resources available under each tab is found below:

- CARES Overview history of program, map of current participants, governance, letters of support.
- States state model FAQs, state funding examples, state participation in action.
- EMS Agencies EMS FAQs, sample reports, agency participation in action, data element PDFs, data dictionary, EMS User Guide.
- Hospitals hospital FAQs, sample reports, data element PDFs, data dictionary, Hospital User Guide.
- Data annual reports, Reports User Guide, legacy national reports, data sharing policy, publications.
- Contact Us contact information for CARES staff and state coordinators.

If you've forgotten your CARES password, please click on the "Forgot password" link below the log-in box. You'll be prompted to answer your unique password question, and a new password will be e-mailed to you.

CARES CASE DEFINITION:

A CARES case is a non-traumatic out-of-hospital cardiac arrest event where resuscitation is attempted by a 911 responder (CPR and/or defibrillation). This includes patients that received an AED shock by a bystander prior to the arrival of 911 responders. Please note: CARES collected only arrests of presumed cardiac etiology from 2005-2012. In 2013, CARES expanded to include all non-traumatic arrests.

This User Guide includes a number of data definitions. For additional examples, please refer to the CARES Data Dictionary, available at https://mycares.net/sitepages/hospitals.jsp.

CHANGING YOUR PASSWORD:

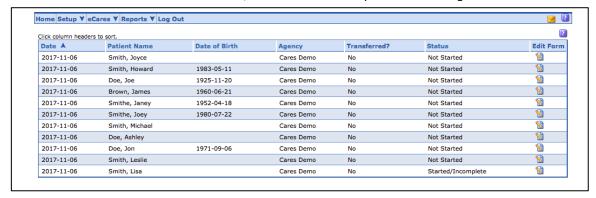
You can change your CARES password by clicking the "Change Password" option on the "Setup" tab.



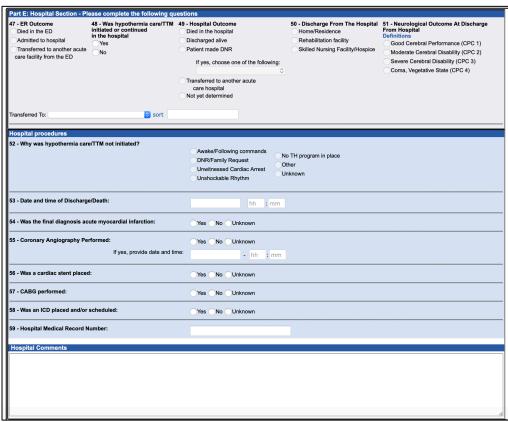
PATIENT OUTCOME DATA ENTRY:

CARES sends an automated e-mail when a patient is transported to your hospital and requires outcome entry. Depending on your facility's call volume, please log in biweekly or monthly to complete data entry. Go to the CARES homepage (https://mycares.net) and log in with the username and case-sensitive password that were provided to you by CARES staff.

Once you have logged in, your Dashboard will appear. Patients that have outstanding hospital outcomes will be listed under the blue header bar. To enter data, click on the Pen & Paper icon on the right side of the screen.

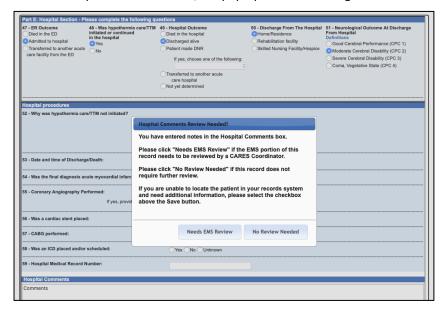


The five required hospital questions are: ER Outcome, Hospital Hypothermia, Hospital Outcome, Discharge From The Hospital, and Neurological Outcome At Discharge. Please select the appropriate answers for these questions. Coding examples can be found in the CARES Data Dictionary. Questions #52-59 are optional and should be entered if you are interested in collecting this additional data. Please enter the Hospital Medical Record Number, if available, in order to help locate the record once de-identified. Feel free to enter notes in the Hospital Comments section. After all questions have been answered, click Save.



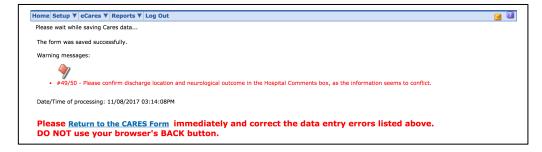


If notes were entered in the Hospital Comments box, the pop-up box below will generate.

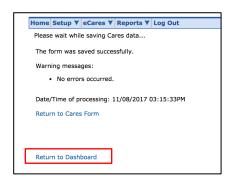


Please click "Needs EMS Review" if the comments require review by CARES staff or EMS personnel (i.e. the EMS portion of the record needs possible correction) and "No Review Needed" if the comments were entered for internal purposes only and do not require review by CARES or EMS. If you are unable to locate a patient in your records system and need additional information, please select the "Unable to locate patient" checkbox above the Save button.

After you click Save, the hospital section will be audited by the CARES software. Any blank fields and/or potentially conflicting information will be flagged on the Save page. Please click the "Return to the CARES Form" link to correct the data or enter comments. Do NOT use your browser's Back button to return to the form. The fields that require attention are listed at the top of the page and highlighted in red. Click "Save" when updates are completed in the form.



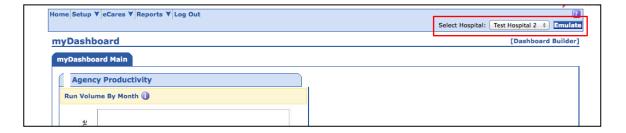
If there are no errors, click the "Return to Dashboard" link on the Save page.





MULTI-HOSPITAL USERS:

If a hospital user enters outcomes for multiple facilities, they can log in to CARES with a single username and password. Upon login, multi-hospital users will see a blank Dashboard. To enter data, select a hospital from the pull-down menu in the upper right-hand corner, click "Emulate", and you'll be taken to the respective hospital's dashboard. When you click "Log Out" while emulating, you'll be taken back to the main Dashboard.

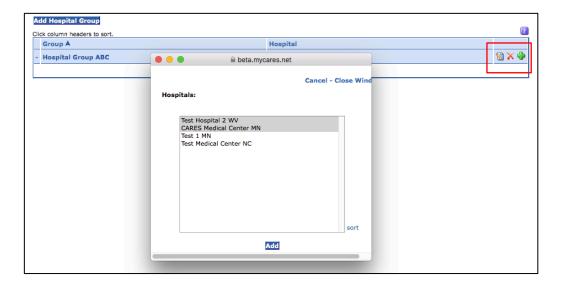


HOSPITAL GROUPS:

Multi-Hospital Users have the capability to create "Hospital Groups", which allow for the generation of system-level reports. To create a new group, click the "Hospital Groups" option on the "Setup" tab. Name the Hospital Group in the Description free text field and click "Add Hospital Group".



Next, add Hospitals to the group by clicking on the green plus sign on the right-hand side of the page. A pop-up box will appear with a list of accessible hospitals. Multi-select the hospitals you want to add to the new group and click **Add**.





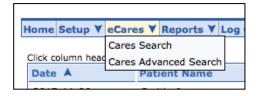
DIFFICULTY LOCATING PATIENTS IN RECORD SYSTEM:

If you are having difficulty locating a CARES patient in your hospital's medical records system, below are some steps to try:

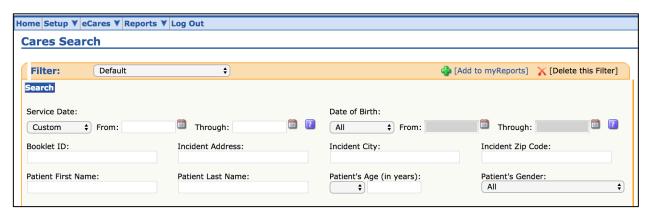
- Search by a similar name spelling, or the first few letters of the patient's name only.
- Search without Date of Birth, as this could be miscoded by EMS personnel.
- Search by last name only.
- Search the Emergency Department log book by date and time of arrival at ED.
- Search by date of arrest and ICD code I46 (cardiac arrest).

If you are still unable to locate the patient, please select the "Unable to locate patient/Need additional info" checkbox and Save the record. This will route the record back to EMS for additional review.

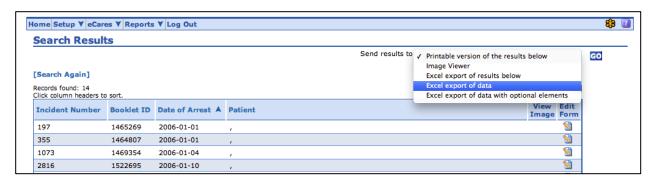
CARES SEARCH AND DATA EXPORT:



The **CARES Search** page is limited to the required elements, while the **CARES Advanced Search** page includes the supplemental elements as well. You can search by any EMS or Hospital data element(s) on the CARES form.



The search results can be exported into Microsoft Excel for further review and analysis. On the search results page, in the upper right-hand corner is a "Send results to" drop down menu. Click the drop down arrow and select "Excel export of data" or "Excel export of data with optional elements". Click "Go". Please be sure your browser's pop-up blocker is turned off or hold down the "Ctrl" key while going through the above steps until the Excel window opens.





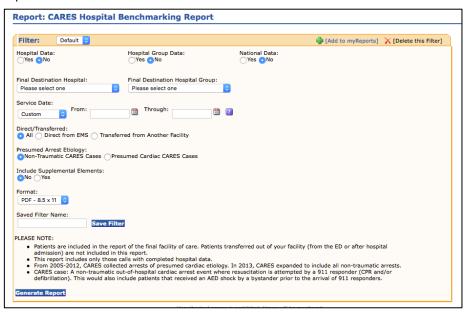
HOSPITAL BENCHMARKING REPORT:

The **CARES Hospital Benchmarking Report** includes both pre-hospital and in-hospital characteristics of a hospital's respective OHCA patient population. The report allows hospital users to track their internal performance and compare against state, hospital group, and national data, where applicable. State data will be provided upon request through your CARES State Coordinator.

To generate this report, access the "Reports" tab in your CARES account and click on "Hospital Benchmarking Report" in the drop-down menu. To customize your report:

- 1. Select "Hospital Data" = Yes to view your hospital-specific data. Multi-Hospital Users have the option to select "Hospital Group Data" to run system-level reports for multiple facilities. Select "National Data" = Yes to add a national benchmarking column to the report.
- 2. Enter the Service Date range of interest. Reports using recent data are not completely audited and therefore may be incomplete. Data by calendar year is not finalized until mid-April of the following year. For example, reports including data from 2021 would not be considered final until mid-April 2022.
- 3. Select origin of patient (Direct from EMS, Transferred from Another Facility, or All).
- 4. Select Data Type (Non-Traumatic CARES Cases OR Presumed Cardiac CARES Cases).
- 5. Indicate whether you want an optional 2nd page included in the report, with a section for Supplemental Hospital Elements (# 52-58).

Inclusion criteria are listed at the top of the report. Patients are included in the report of the <u>final</u> facility of care. Patients transferred out of your facility (from the ED or after hospital admission) and incomplete records are <u>not included</u> in this report.



After clicking "Generate Report", the pop-up box below will appear. This box reminds you that recent data may not be completely audited; data by calendar year is not finalized until mid-April of the following year. Click OK to acknowledge your understanding of this message.





The top of the Hospital Benchmarking Report lists the total number of CARES patients received by your hospital during the date range of interest. The total is broken down by the number who were transported directly by EMS and those who were transferred from another facility. Please note: the Hospital Benchmarking Report can be filtered by these criteria on the report setup page.

Total # of CARES Patients - Hospital	40
Direct from EMS	29
Transferred from another facility	11

The Hospital Benchmarking Report summarizes the number and percentage of patients who survived to hospital admission and discharge, for each pre-hospital characteristic. "Survived to Admission" includes patients for whom ER Outcome = admitted to ICU/CCU, admitted to floor, or admitted to hospital. "Survived to Discharge" includes patients for whom Hospital Outcome = discharged alive or patient made DNR → discharged alive. The denominator for both survival rates is the N in the left-most column (Total).

CARES Medical Center								
Total (%)	Survived to Admission (%)	Survived to Discharge (%)						
40	27 (67.5)	25 (62.5)						

<u>Pre-Hospital Characteristic Definitions:</u>

Initial Rhythm – First cardiac rhythm present when a manual monitor/defibrillator or AED is attached to a patient.

Shockable: includes Ventricular Fibrillation, Ventricular Tachycardia, and Unknown Shockable rhythms

Unshockable: includes Asystole, Idioventricular/PEA, and Unknown Unshockable rhythms

Witnessed Status – A witnessed arrest is one that is seen or heard by another person.

Sustained ROSC in field – Return of Spontaneous Circulation (ROSC) is defined as the restoration of a palpable pulse or a measureable blood pressure. Sustained ROSC is deemed to have occurred when chest compressions are not required for 20 consecutive minutes and signs of circulation persist.

Utstein arrest – Cardiac arrest was witnessed by a bystander and patient was found in a shockable rhythm.

In-Hospital Characteristic Definitions:

Hypothermia care initiated/continued in hospital - Hypothermia care is provided in the hospital if measures were taken to reduce the patient's body temperature by either non-invasive means (administration of cold intravenous saline, external cold pack application to armpits and groin, use of a cooling blanket, torso vest or leg wrap devices) or by invasive means (use of a cooling catheter inserted in the femoral vein).

Good Cerebral Performance – Conscious, alert, able to work and lead a normal life.

Moderate Cerebral Disability – Conscious and able to function independently (dress, travel, prepare food), but may have hemiplegia, seizures, or permanent memory or mental changes.

Supplemental Hospital Elements – These data elements are *optional* and found on a 2nd page if this is selected upon report setup. The denominator for these metrics is the number of cases for whom these questions were answered. Blank fields and "unknown" responses are not included in the analysis.

CARES Hospital Benchmarking Report (Non-Traumatic Etiology)

Sample Report

	Direct from EMS	Direct from EMS 310 Dire		Total # of CARES Patients - State Direct from EMS Transferred from another facility 2981 70		ratients - National 4977 4742 another facility 2356	
	Hos	Hospital		State	Nati	National	
In-Hospital Characteristics	Total (%)	Survived to Discharge (%)	Total (%)	Survived to Discharge (%)	Total (%)	Survived to Discharge (%)	
Died in ED	227 (73.0)		2238 (75.1))	28016 (56.3)		
Admitted to hospital	84 (27.0)	36 (42.9)	743 (24.9)	250 (33.6)	21764 (43.7)	8091 (37.2)	
In-hospital hypothermia*	16 (19.0)	9 (56.2)	285 (38.4)	86 (30.2)	9835 (45.2)	3234 (32.9)	
Patient made DNR*	23 (27.4)	4 (17.4)	166 (22.3)	22 (13.3)	5166 (23.7)	297 (5.7)	
In-hospital mortality*	48 (57.1)		493 (66.4)	-	13673 (62.8)		
Discharged alive	36 (11.6)		250 (8.4)		8091 (16.3)		
Discharged with good/moderate CPC	18 (5.8)		167 (5.6)		6510 (13.1)		

	Hospital		State			National			
	Total (%)	Survived to Admission (%)	Survived to Discharge (%)	Total (%)	Survived to Admission (%)	Survived to Discharge (%)	Total (%)	Survived to Admission (%)	Survived to Discharge (%)
Pre-Hospital Characteristics	311	84 (27.0)	36 (11.6)	2981	743 (24.9)	250 (8.4)	49779	21764 (43.7)	8091 (16.3)
Gender									
Male	189 (60.8)	46 (24.3)	19 (10.1)	1706 (57.2)	391 (22.9)	139 (8.1)	30899 (62.1)	13357 (43.2)	5335 (17.3)
Female	122 (39.2)	38 (31.1)	17 (13.9)	1275 (42.8)	352 (27.6)	111 (8.7)	18874 (37.9)	8403 (44.5)	2756 (14.6)
Mean Age	60.8			61.3			60.9		
Initial Rhythm									
Shockable	60 (19.3)	23 (38.3)	13 (21.7)	552 (18.5)	198 (35.9)	108 (19.6)	12155 (24.4)	6918 (56.9)	4157 (34.2)
Unshockable	251 (80.7)	61 (24.3)	23 (9.2)	2429 (81.5)	545 (22.4)	142 (5.8)	37611 (75.6)	14835 (39.4)	3924 (10.4)
Witnessed Status									
Unwitnessed	108 (34.7)	18 (16.7)	7 (6.5)	1496 (50.2)	273 (18.2)	63 (4.2)	19882 (39.9)	7198 (36.2)	1801 (9.1)
Bystander Witnessed	152 (48.9)	48 (31.6)	20 (13.2)	1111 (37.3)	333 (30.0)	134 (12.1)	21351 (42.9)	10648 (49.9)	4561 (21.4)
Witnessed by 911 Responder	51 (16.4)	18 (35.3)	9 (17.6)	374 (12.5)	137 (36.6)	53 (14.2)	8546 (17.2)	3918 (45.8)	1729 (20.2)
Sustained ROSC in field	116 (37.3)	71 (61.2)	32 (27.6)	832 (27.9)	554 (66.6)	214 (25.7)	24368 (49.0)	18147 (74.5)	7453 (30.6)
Hypothermia care initiated in the field	6 (1.9)	3 (50.0)	2 (33.3)	50 (1.7)	22 (44.0)	11 (22.0)	3050 (6.1)	1971 (64.6)	690 (22.6)
Utstein† Arrest	40 (12.9)	18 (45.0)	10 (25.0)	305 (10.2)	115 (37.7)	68 (22.3)	7385 (14.8)	4456 (60.3)	2780 (37.6)

Patients are included in the report of the final facility of care. Patients transferred out of your facility (from the ED or after hospital admission) are not included in this report. This report includes only those calls with completed hospital data. CARES case: An out-of-hospital cardiac arrest where resuscitation is attempted by a 911 responder (CPR and/or defibrillation). This would also include patients that received an AED shock by a bystander prior to the arrival of 911 responders. *Among admitted patients.

[†]Utstein patient: witnessed by bystander and found in a shockable rhythm.

CARES Hospital Benchmarking Report (Non-Traumatic Etiology)

Sample Report

Supplemental Hospital elements (analysis limited to questions with Yes or No response only)

	Hospital		St	tate	National	
	Total (%)	Survived to Discharge (%)	Total (%)	Survived to Discharge (%)	Total (%)	Survived to Discharge (%)
Supplemental Characteristics						
Why was hypothermia care not initiated or continued in the	e hospital?					
Awake/Following commands	1 (16.7)	1 (100.0)	10 (7.1)	10 (100.0)	920 (24.9)	855 (92.9)
DNR/Family request	1 (16.7)	0 (0.0)	22 (15.6)	0 (0.0)	434 (11.7)	38 (8.8)
Unwitnessed Cardiac Arrest	1 (16.7)	0 (0.0)	14 (9.9)	0 (0.0)	296 (8.0)	46 (15.5)
Unshockable Rhythm	2 (33.3)	0 (0.0)	8 (5.7)	3 (37.5)	374 (10.1)	94 (25.1)
No TH program in place	0 (0.0)	0 (NaN)	1 (0.7)	0 (0.0)	65 (1.8)	22 (33.8)
Other	1 (16.7)	1 (100.0)	86 (61.0)	32 (37.2)	1611 (43.5)	503 (31.2)
Unknown	0 (0.0)	0 (NaN)	0 (0.0)	0 (NaN)	0 (0.0)	0 (NaN)
Myocardial infarction diagnosis	20 (11.0)	5 (25.0)	114 (8.5)	51 (44.7)	4344 (18.2)	1934 (44.5)
Coronary angiography performed	15 (8.2)	10 (66.7)	127 (8.7)	83 (65.4)	4620 (16.7)	3093 (66.9)
Cardiac stent placed	6 (3.3)	4 (66.7)	64 (4.4)	41 (64.1)	2225 (8.0)	1510 (67.9)
CABG performed	1 (0.5)	1 (100.0)	5 (0.3)	5 (100.0)	275 (1.0)	254 (92.4)
ICD placed/scheduled	1 (0.6)	1 (100.0)	35 (2.4)	35 (100.0)	1495 (5.4)	1453 (97.2)

Patients are included in the report of the final facility of care. Patients transferred out of your facility (from the ED or after hospital admission) are not included in this report. This report includes only those calls with completed hospital data. CARES case: An out-of-hospital cardiac arrest where resuscitation is attempted by a 911 responder (CPR and/or defibrillation). This would also include patients that received an AED shock by a bystander prior to the arrival of 911 responders. *Among admitted patients.

†Utstein patient: witnessed by bystander and found in a shockable rhythm.



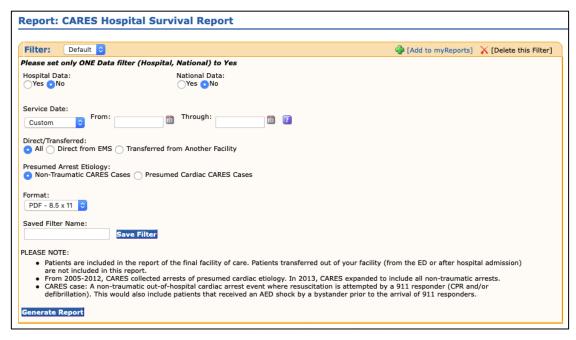
HOSPITAL SURVIVAL REPORT:

The **CARES Hospital Survival Report** follows a flow diagram format, categorizing arrests by sustained ROSC in the field, initial rhythm, and patient outcome.

To generate this report, access the "Reports" tab in your CARES account and click on "Hospital Survival Report" in the drop-down menu. To customize your report:

- 1. Select "Hospital Data" = Yes to view your hospital-specific data. Multi-Hospital Users have the option to select "Hospital Group Data" to run system-level reports for multiple facilities. Select "National Data" = Yes to view aggregate, National data for benchmarking purposes. Please note, only one Data filter may be selected at a time.
- 2. Enter the Service Date range of interest. Reports using recent data are not completely audited and therefore may be incomplete. Data by calendar year is not finalized until mid-April of the following year. For example, reports including data from 2021 would not be considered final until mid-April 2022.
- 3. Select origin of patient (Direct from EMS, Transferred from Another Facility, or All).
- 4. Select Data Type (Non-Traumatic CARES Cases OR Presumed Cardiac CARES Cases).
- 5. Click "Generate Report".

Inclusion criteria are listed at the top of the report. Patients are included in the report of the <u>final</u> facility of care. Patients transferred out of your facility (from the ED or after hospital admission) and are <u>not included</u> in this report.



After clicking "Generate Report", the pop-up box below will appear. This box reminds you that recent data may not be completely audited; data by calendar year is not finalized until mid-April of the following year. Click OK to acknowledge your understanding of this message.





In the upper right-hand corner of the Hospital Survival Report, you will see a box listing a number of survival rates.

- **Survival to Admission**: Patients who survived to hospital admission (ER Outcome is Admitted to ICU/CCU, floor, or hospital).
- **Survival to Discharge**: Patients who survived to hospital discharge (Hospital Outcome or Patient made DNR Outcome is Discharged Alive).
- **Sustained ROSC Survival**: Survival to hospital discharge among the subset of patients who achieved sustained ROSC in the field.
- **Shockable/Cooled Survival**: Survival to hospital discharge among the subset of patients who presented in a shockable rhythm and received hypothermia care at the hospital.
- **Nonshockable/Cooled Survival**: Survival to hospital discharge among the subset of patients who presented in a nonshockable rhythm and received hypothermia care at the hospital.

Arrest Characteristic & Treatment Definitions:

Sustained ROSC in field – Return of Spontaneous Circulation (ROSC) is defined as the restoration of a palpable pulse or a measureable blood pressure. Sustained ROSC is deemed to have occurred when chest compressions are not required for 20 consecutive minutes and signs of circulation persist.

Initial Rhythm – First cardiac rhythm present when a manual monitor/defibrillator or AED is attached to a patient.

Shockable: includes Ventricular Fibrillation, Ventricular Tachycardia, and Unknown Shockable rhythms

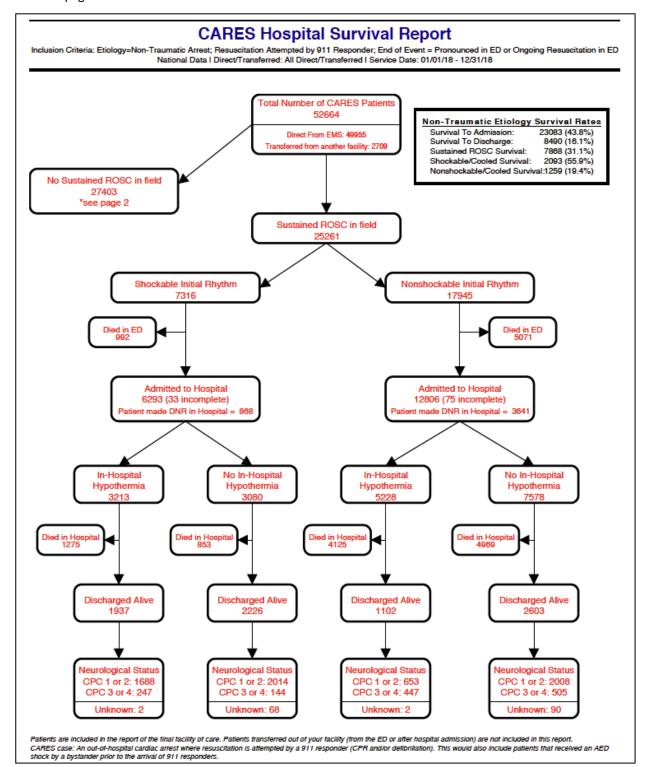
Unshockable: includes Asystole, Idioventricular/PEA, and Unknown Unshockable rhythms

In-hospital hypothermia: Measures were taken in the hospital to reduce the patient's body temperature by either non-invasive means (administration of cold intravenous saline, external cold pack application to armpits and groin, use of a cooling blanket, torso vest or leg wrap devices) or by invasive means (use of a cooling catheter inserted in the femoral vein).

*Please note: In-hospital hypothermia rate is limited to patients who were admitted to the hospital.



Patients with **Sustained ROSC in the field** are found on page 1. Patients **without sustained ROSC in the field** are found on page 2.





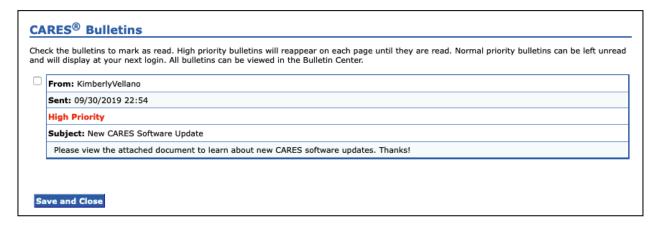
MASS COMMUNICATION:

Occasionally, CARES will send updates to our end users and stakeholders. These messages may include information about software upgrades and changes, training and education opportunities, or data entry deadlines. You will receive these messages via e-mail, and they will also be accessible in your CARES Message Center upon log-in.

Once you enter the site, a blinking, yellow envelope will indicate a new message in your inbox. You may access your Message Center at the top right-hand corner of the page.



High Priority messages will require your acknowledgment before navigating away from the page by checking the box and choosing "Save and Close."



You will be able to save any attachments that are included in the message for future reference by accessing your Message Center inbox and clicking on the paper clip icon under the "Attachments" column.

