Cardiac Arrest Registry Database – 2010

Office of the Medical Director

Monthly Statistical Summary Cardiac Arrest, August 2010

Description	Western Division Totals	Western Division %	Eastern Division Totals	Eastern Division%
Total Number of Cardiac Arrests	61		34	
Total Number of Cardiac Arrest: Cardiac Etiology	38	62%	19	56%
Total Number of Cardiac Arrests: Resuscitation Term. Trial ALS	9	15%	6	18%
Resuscitation Not Halted in Field but met Screening Criteria for Term.	14	61%	6	46%
Total Number of Cardiac Arrests: Non-Cardiac Etiology	23	38%	15	44%
Total Field ROSC, AC Event:	13	34%	6	32%
Total Field ROSC Regardless of Etiology	15	25%	12	35%
Cardiac Arrest Not-Witnessed, AC Event	16	42%	8	42%
Cardiac Arrest Not-Witnessed, AC Event, ROSC	5	31%	2	25%
Cardiac Arrest Bystander Witnessed, AC Event	17	45%	7	37%
Cardiac Arrest Bystander Witnessed, AC Event, ROSC	7	41%	4	57%
Total Bystander CPR, AC Event	17	52%	7	47%
EMS Witnessed Cardiac Arrest, AC Event	5	13%	4	21%
EMS Witnessed Cardiac Arrest, AC Event, ROSC	1	20%	0	0%
Rhythm on Arrival: Non-Ventricular Group, (Asystole/PEA), AC Event	25	76%	10	67%
Rhythm on Arrival: Ventricular Group, (VF/Pulseless/VT)	8	24%	2	13%
Field ROSC from VF, AC Event	4	50%	2	33%
ETT successfully placed/Cardiac Arrest	46	81%	26	81%
Capnography attached to ETT	46	100%	26	100%
Average time from ETT placement to ETCO2 Attachment	1:15	65% (< 60secs)	:53	81% (< 60 secs)
Intravenous/Intraosseous Access/Cardiac Arrest	60	98%	34	100%
FD On Scene 1st/All Cardiac Arrests/Non-EMS-Witnessed	34	67%	18	62%
Response Time to the Scene < 4.5 minutes	10	30%	9	64%
Defibrillation Report: Shock Time < 6 minutes	2	25%	1	33%
Defibrillation Report: Shock Time < 7 minutes	2	25%	1	33%
Defibrillation Report: Shock Time > 7 minutes	6	75%	2	67%
VF, Bystander CPR	5	63%	0	0%
Site of Cardiac Arrest Regardless of Etiology, (Home)	44	72%	25	73%
Control Chart Summary Description	**Current Month 8/10 Western Division**	**25 month data average, Western Division**	**Current Month 8/10 Eastern Division**	**25 month data average, Eastern Division**
% of Bystander CPR/AC Event	51%	49%	47%	44%
% AC Events Response Time to Scene < 4.5 minutes	30%	41%	64%	53%
% AC Events Initial Rhythm VF/DF Time < 6 minutes	25%	11%	33%	12%
% Return of Spontaneous Circulation from AC Event	34%	31%	32%	33%
% of Field ROSC/VF Initial Rhythm/AC Event	50%	47%	67%	47%
Total Number of Cardiac Arrests/Non-EMS Witnessed	51	40	29	32
% of AC Events/Initial Rhythm VF/Pulseless VT	24%	30%	13%	24%
% of Cardiac Arrests/FD On-Scene 1st	67%	65%	62%	56%
% of AC Events Response Time to Scene </= 8 minutes	97%	92%	100%	97%
% of Successful ETT Placement (Non-Traumatic Cardiac Arrests)	81%	90%	81%	92%
% Cardiac Arrests @ Nursing Homes	10% (6)	12%	18% (6)	14%
%ETCO2 Attachment in < / = 60 seconds from the time of ETT Insertion	65%	67%	81%	57%
% of Cardiac Arrest that occur at Home	72%	69%	73%	66%
Average Age/Acute Cardiac Arrest/Non-EMS Witnessed Etiology: Acute Cardiac Event	65	65	70	65
Resus. Discon. in the Field After Trial ALS That Met Protocol Criteria	39%	49%	46%	63%

Office of the Medical Director
Continuous Quality Improvement Report
August 2010
Cardiac Arrest

Western Division

In the Western Division, during the month of August 2010, paramedics managed sixty - one, (61) patients in cardiac arrest. After initiating advanced life support, nine (9) resuscitations were halted in the field. Thirty - eight (38), 62%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the twenty - three (23, 38%) remaining cases; Cancer three (3) cases; Choking one (1) case; Drug / OD four (4) cases; Exsanguination one (1) case; Hanging two (2) cases; Hypoxia five (5) cases; Intoxication one (1) case; SIDS one (1) case; Trauma three (3) cases; Metabolic one (1) case; Hyperthermia one (1) case. These twenty - three (23) cases were excluded from this review because they were cases of non-cardiac etiology.

Of the thirty - eight (38) patients, whose arrest was presumably caused by heart disease, thirteen (13) patients were resuscitated in the field. (Percentage of return of spontaneous circulation in the field from an acute cardiac event was equal to 34%)

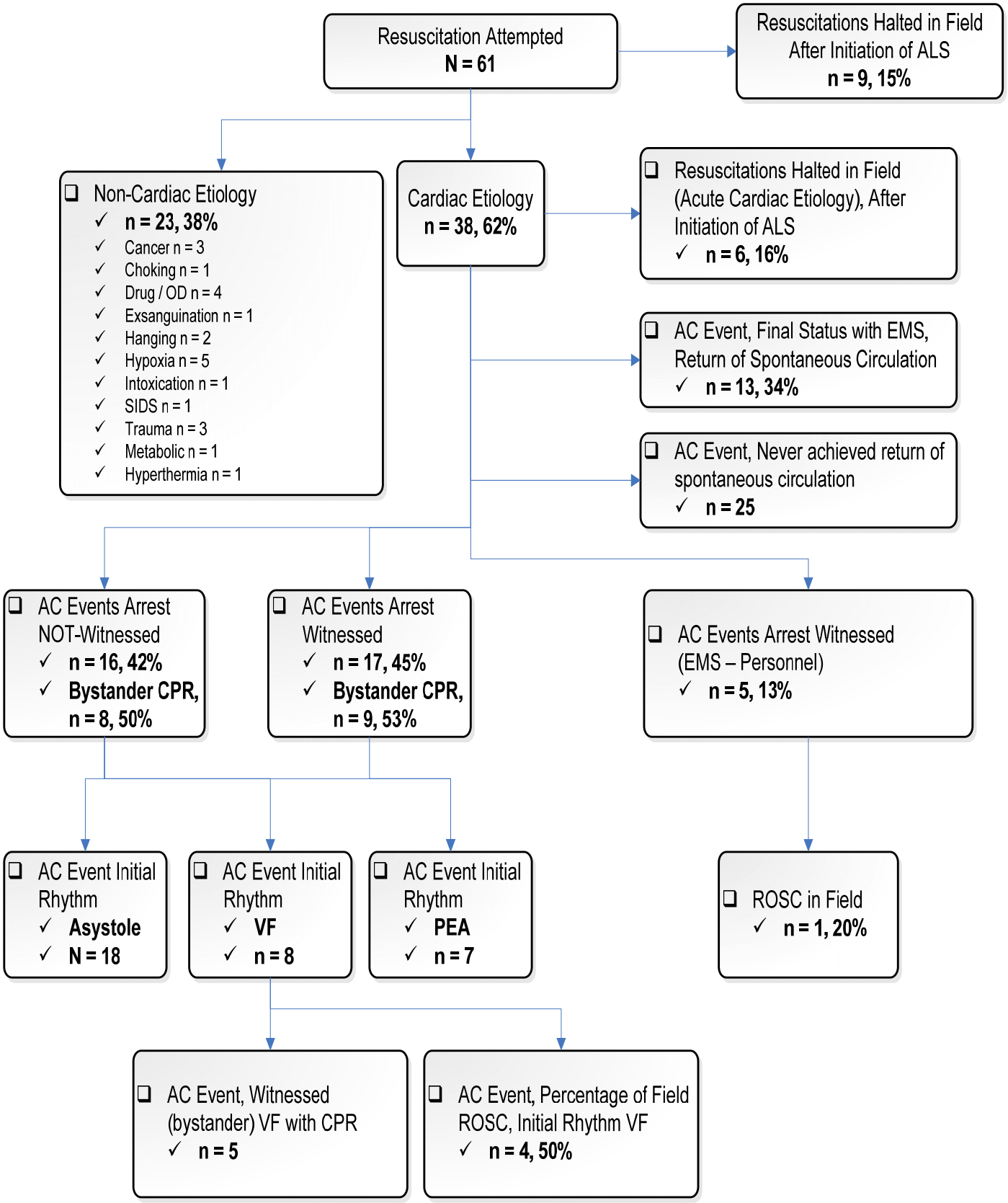
Sixteen (16) patients (42%) had an unwitnessed event. In sixteen (16) unwitnessed cardiac arrest cases, eight (8) patients received bystander CPR, (***50%***). Five (5) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 31%).

Seventeen (17) patients (45%) had a witnessed event. In seventeen (17) witnessed cardiac arrest cases, nine (9) patients received bystander CPR, (***53%***). Seven (7) patients were resuscitated in the field who suffered a witnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from a witnessed cardiac arrest was equal to 41%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of September five (5) patients met the criteria for cardiac arrest witnessed by emergency medical services personnel. One (1) patient was resuscitated. (Percentage of return of spontaneous in the field from EMS-witnessed cardiac arrest was equal to 20%).

The rhythm on arrival was asystole in 55% (18 patients), ventricular fibrillation in 24% (8 patients), and pulseless electrical activity in 21% (7 patient). Non-ventricular pulseless rhythm groups appear to represent the majority of patients in whom out-of-hospital resuscitation was attempted, (76% non-ventricular pulseless rhythms vs. 24% ventricular pulseless rhythms).

Utstein Style Template Showing Data on Cardiac Arrests in Resuscitation Attempted in 61 Patients Western Division, August 2010



Summary: Transporting of Patients in Continuing Cardiac Arrest:

Description	Total Number	Nursing Home	Home	Age Range	Average Age	AC Event	Drug /OD	Metabolic	Hypoxia	CA	Choking	Exsanguination
Resuscitation not Halted in Field	14	2	12	24 – 98	61.57	8	N/A	1	2	1	1	1
Resuscitation Halted in Field	9	2	7	32 – 91	69.55	6	2	1	2	1	1	1

Office of the Medical Director
Continuous Quality Improvement Report
August 2010
Cardiac Arrest

Eastern Division

In the Eastern Division, during the month of August 2010, paramedics managed thirty - four (34) patients in cardiac arrest. After initiating advanced life support, six (6) resuscitations were halted in the field. Nineteen (19, 56%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the fifteen (15, 44%) remaining cases; Alheimer's Disease one (1) case; Cancer one (1) case; Choking three (3) cases; End – Stage Renal Disease one (1) case; Exsanguination one (1) case; Hypoxia five (5) cases; Metabolic one (1) case; SIDS one (1) case; Complications with obesity one (1) case. These fifteen (15) cases were excluded from this review because they were cases of non-cardiac etiology.

Of the nineteen (19) patients, whose arrest was presumably caused by heart disease, six (6) patients were resuscitated in the field. (Percentage of return of spontaneous circulation in the field from an acute cardiac event was equal to 32%).

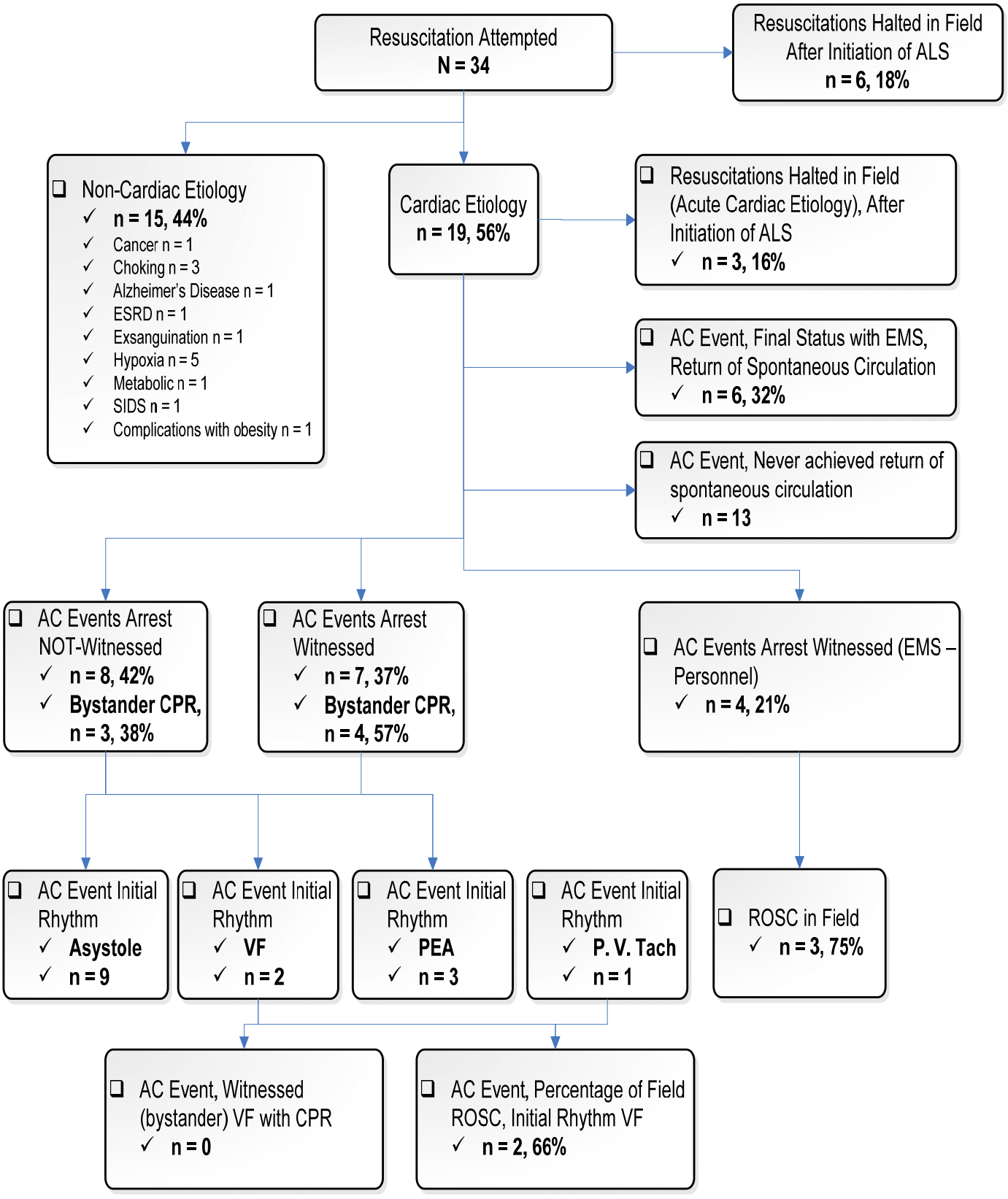
Eight (8) patients (42%) had an unwitnessed event. In eight (8) unwitnessed cardiac arrest cases, three (3) patients received bystander CPR, (***38%***). Two (2) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 25%).

Seven (7) patients (37%) had a witnessed event. In seven (7) witnessed cardiac arrest cases, four (4) patients received bystander CPR, (***57%***). Four (4) patients were resuscitated. (Percentage of return of spontaneous circulation in the field from a *Non-EMS*-witnessed cardiac arrest was equal to 57%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of August four (4) patients met the criteria for cardiac arrest witnessed by emergency medical services personnel. None of these patients were resuscitated. (Percentage of return of spontaneous circulation in the field from a *Non-EMS*-witnessed cardiac arrest was equal to 0%).

The rhythm on arrival was asystole in 60% (9 patients), ventricular fibrillation in 13% (2 patients), pulseless ventricular tachycardia 7% (1) patient, and pulseless electrical activity in 20% (3 patients). Non-ventricular pulseless rhythm groups appear to represent the majority of patients in whom out-of-hospital resuscitation was attempted, (80% non-ventricular pulseless rhythms vs. 20% ventricular pulseless rhythms).

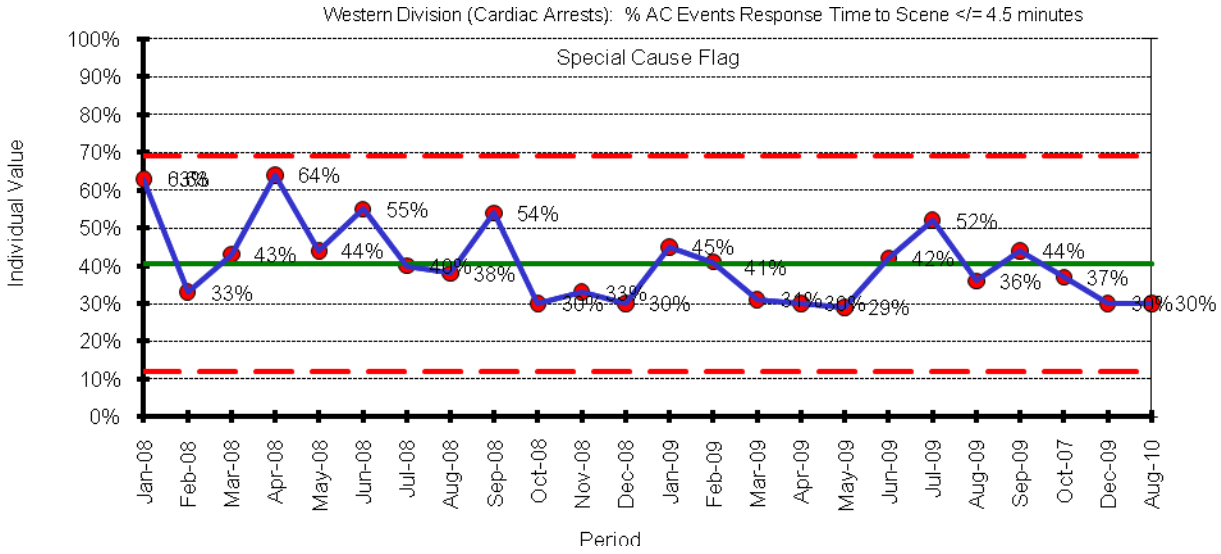
Utstein Style Template Showing Data on Cardiac Arrests in Resuscitation Attempted in 34 Patients Eastern Division, August 2010



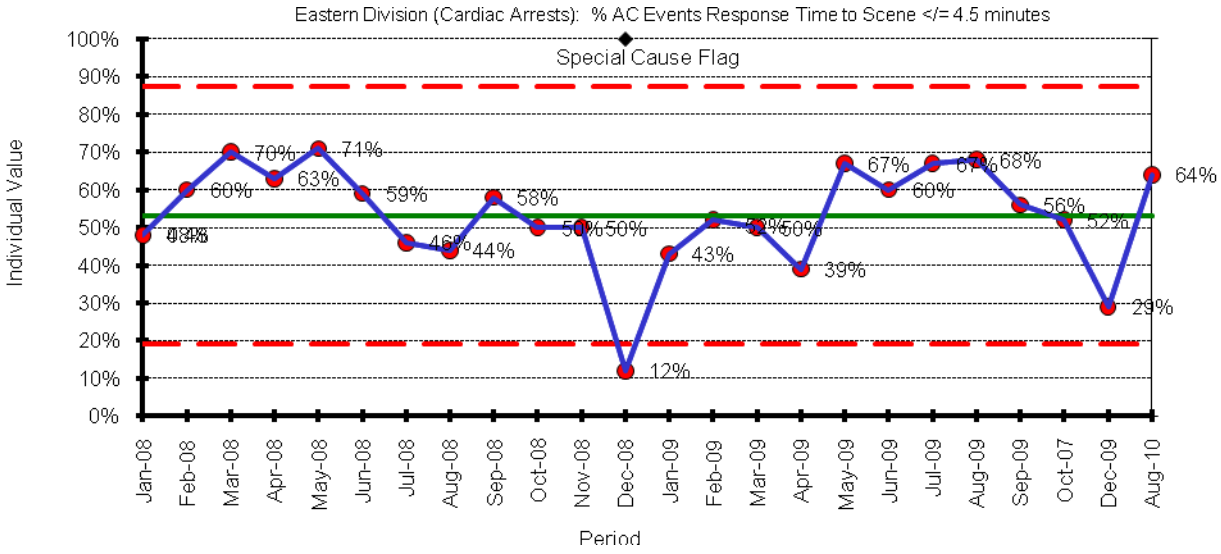
Summary: Transporting of Patients in Continuing Cardiac Arrest:

Description	Total Number	Nursing Home	Home	Age Range	Average Age	AC Event	Metabolic	Exsanguination	Complications with Alzheimer's Disease	Hypoxia	Complications with Obesity
Resuscitation Not Halted in Field	7	2	5	20 - 92	54.57	4	1	N/A	N/A	1	1
Resuscitation Halted in Field	6	1	5	40 – 104	71.33	3	N/A	1	1	1	N/A

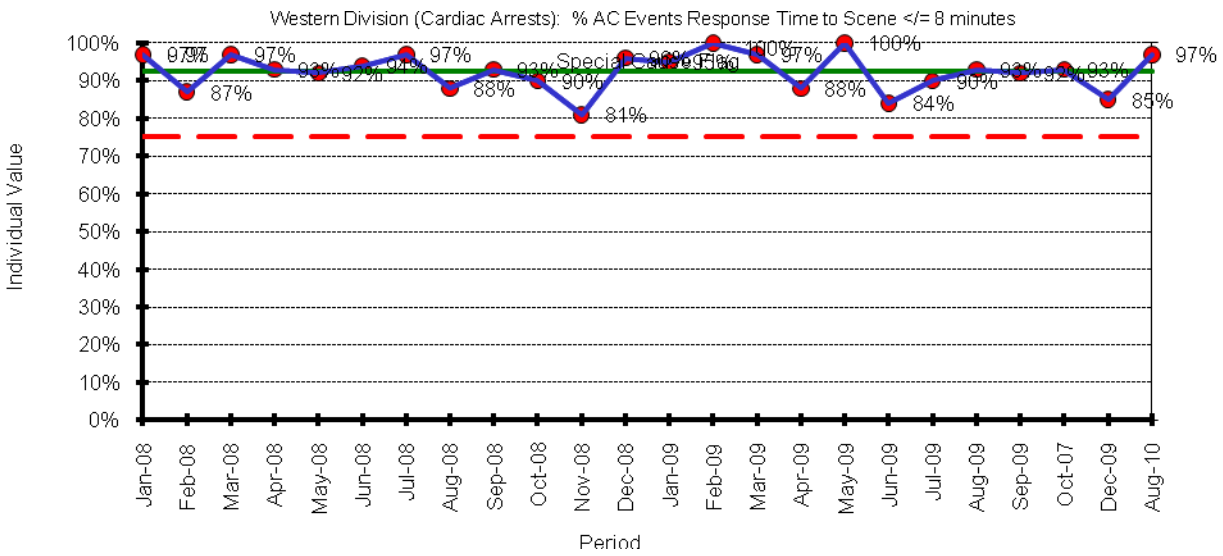
The control charts below ***(% of AC Events Response Time to Scene < / = 4.5 minutes)*** are examples of a stable, in statistical control, process, to explain: *Most* points are near the average; there are a *few* points near the control limits,(the red dash lines); *no* points are beyond the control limits.



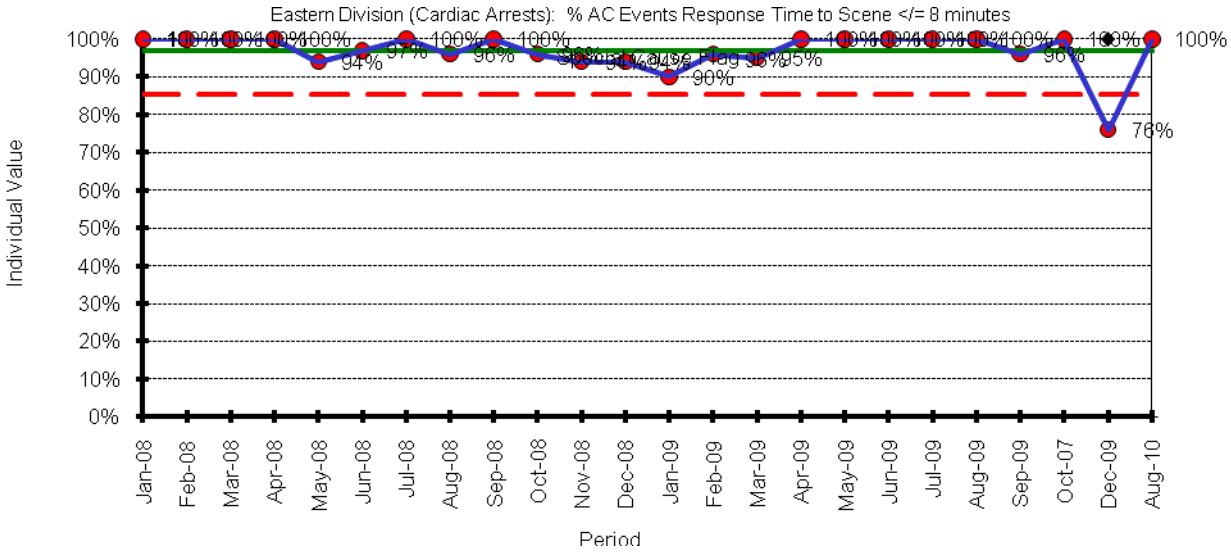
Average of Data Shown: 41%



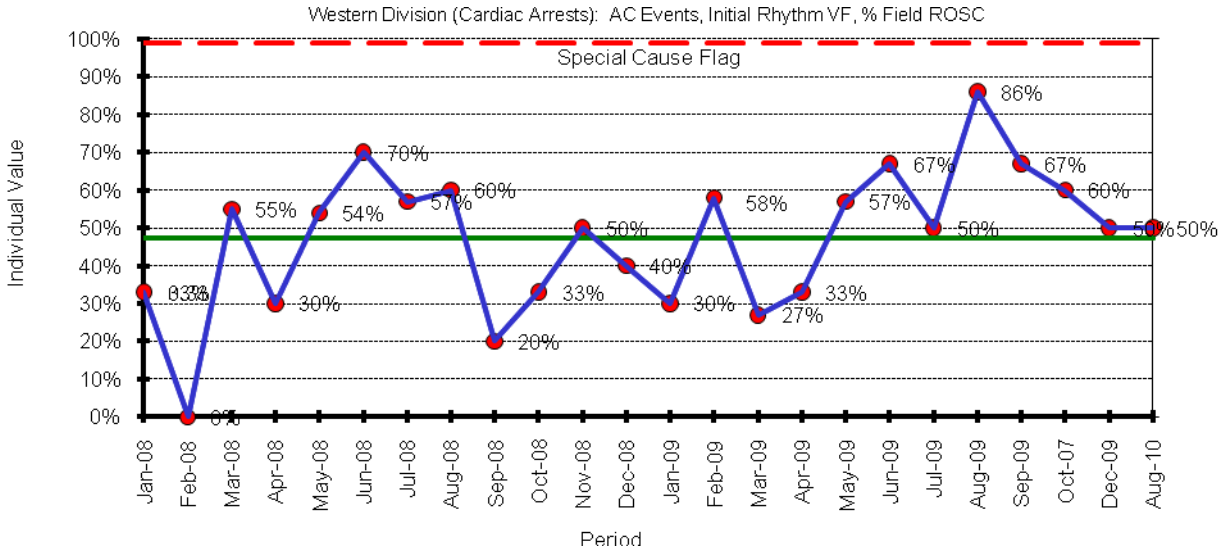
Average of Data Shown: 53%



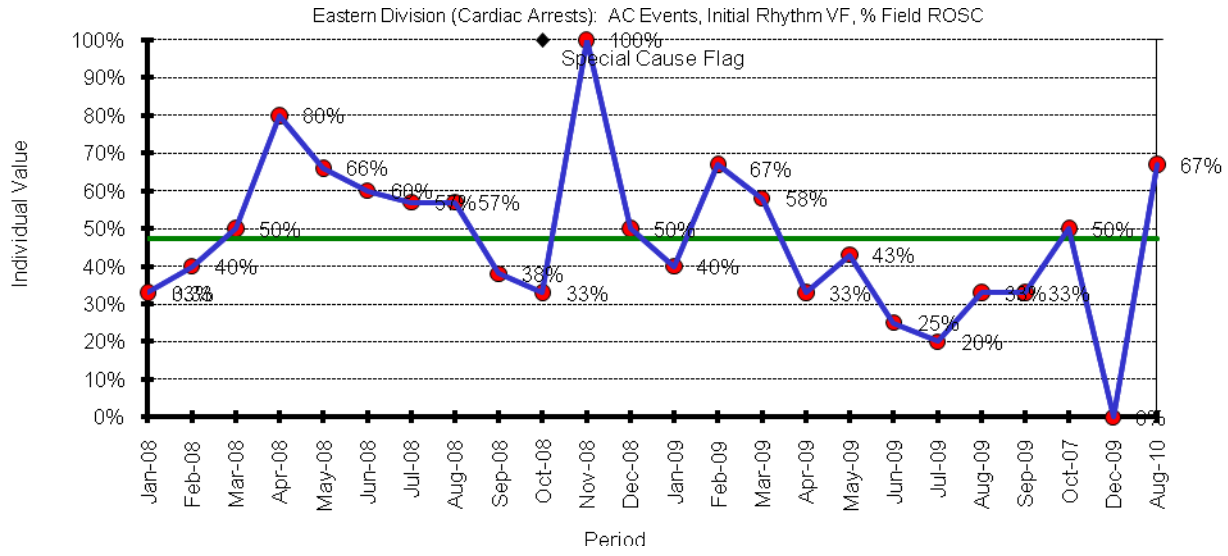
Average of Data Shown: 92%



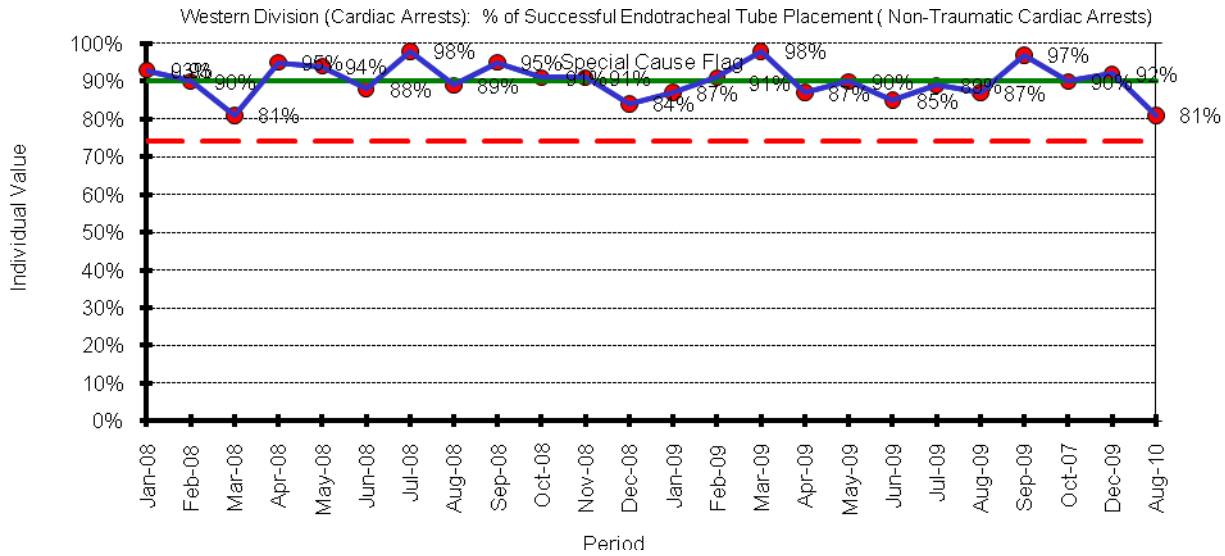
Average of Data Shown: 97%The control charts below ***(% of AC Events, Initial Rhythm VF, % of Field ROSC)*** are examples of a stable, in statistical control, process, to explain: *Most* points are near the average; there are a *few* points near the control limits,(the red dash lines); *no* points are beyond the control limits.



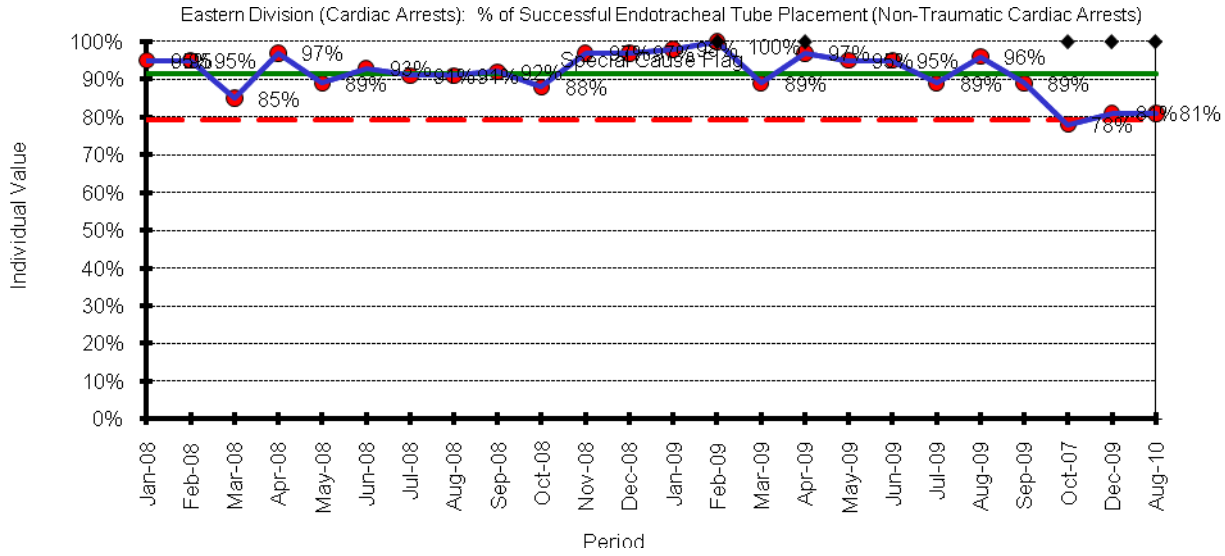
Average of Data Shown: 47%



Average of Data Shown: 47%



Average of Data Shown: 90%



Average of Data Shown: 92%