Cardiac Arrest Registry Database – 2010

Office of the Medical Director

Monthly Statistical Summary Cardiac Arrest, December 2010

Description	Western Division Totals	Western Division %	Eastern Division Totals	Eastern Division%
Total Number of Cardiac Arrests	60		53	
Total Number of Cardiac Arrest: Cardiac Etiology	38	63%	38	72%
Total Number of Cardiac Arrests: Resuscitation Term. Trial ALS	17	28%	7	13%
Resuscitation Not Halted in Field but met Screening Criteria for Term.	3	12%	4	14%
Total Number of Cardiac Arrests: Non-Cardiac Etiology	22	37%	15	28%
Total Field ROSC, AC Event:	13	34%	11	29%
Total Field ROSC Regardless of Etiology	18	30%	18	34%
Cardiac Arrest Not-Witnessed, AC Event	18	47%	22	58%
Cardiac Arrest Not-Witnessed, AC Event, ROSC	5	28%	7	32%
Cardiac Arrest Bystander Witnessed, AC Event	19	50%	13	34%
Cardiac Arrest Bystander Witnessed, AC Event, ROSC	8	42%	2	15%
Total Bystander CPR, AC Event	21	57%	16	46%
EMS Witnessed Cardiac Arrest, AC Event	1	3%	3	8%
EMS Witnessed Cardiac Arrest, AC Event, ROSC	0	0%	2	66%
Rhythm on Arrival: Non-Ventricular Group, (Asystole/PEA), AC Event	28	76%	29	82%
Rhythm on Arrival: Ventricular Group, (VF/Pulseless/VT)	9	24%	6	17%
Field ROSC from VF, AC Event	5	56%	2	33%
ETT successfully placed/Cardiac Arrest	45	76%	38	75%
Capnography attached to ETT	45	100%	38	100%
Average time from ETT placement to ETCO2 Attachment	1 : 02	80% (< 60secs)	0 : 48	76% (< 60 secs)
Intravenous/Intraosseous Access/Cardiac Arrest	57	95%	53	100%
FD On Scene 1st/All Cardiac Arrests/Non-EMS-Witnessed	31	59%	22	45%
Response Time to the Scene < 4.5 minutes	18	49%	17	49%
Defibrillation Report: Shock Time < 6 minutes	1	11%	1	25%
Defibrillation Report: Shock Time < 7 minutes	5	55%	1	25%
Defibrillation Report: Shock Time > 7 minutes	4	45%	3	75%
VF, Bystander CPR	6	67%	2	33%
Site of Cardiac Arrest Regardless of Etiology, (Home)	39	65%	36	68%
Control Chart Summary Description	**Current Month 12/10 Western Division**	**25 month data average, Western Division**	**Current Month 12/10 Eastern Division**	**25 month data average, Eastern Division**
% of Bystander CPR/AC Event	57%	50%	46%	44%
% AC Events Response Time to Scene < 4.5 minutes	49%	38%	49%	52%
% AC Events Initial Rhythm VF/DF Time < 6 minutes	11	12%	25%	11%
% Return of Spontaneous Circulation from AC Event	34%	31%	29%	32%
% of Field ROSC/VF Initial Rhythm/AC Event	56%	51%	33%	49%
Total Number of Cardiac Arrests/Non-EMS Witnessed	52	40	49	33
% of AC Events/Initial Rhythm VF/Pulseless VT	24%	29%	17%	24%
% of Cardiac Arrests/FD On-Scene 1st	59%	63%	45%	55%
% of AC Events Response Time to Scene </= 8 minutes	81%	92%	97%	96%
% of Successful ETT Placement (Non-Traumatic Cardiac Arrests)	76%	89%	75%	89%
% Cardiac Arrests @ Nursing Homes	17% (10)	13%	13% (7)	14%
%ETCO2 Attachment in < / = 60 seconds from the time of ETT Insertion	80%	77%	76%	68%
% of Cardiac Arrest that occur at Home	65%	69%	68%	67%
Average Age/Acute Cardiac Arrest/Non-EMS Witnessed Etiology: Acute Cardiac Event	70	65	68	66
Resus. Discon. in the Field After Trial ALS That Met Protocol Criteria	85%	52%	64%	62%

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

Western Division

In the Western Division, during the month of December 2010, paramedics managed sixty, (60) patients in cardiac arrest. After initiating advanced life support, seventeen (17) resuscitations were halted in the field. Thirty - eight (38), 63%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the twenty - two (22, 37%) remaining cases; Cancer five (5) cases; Choking one (1) case; Drug / OD three (3) cases; End – Stage Renal Disease one (1) case; Exsanguination three (3) cases; Hypoxia six (6) cases; Metabolic (Insulin Shock) one (1) case; Pneumonia one (1) case; Trauma one (1) case. These twenty - two (22) 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%)

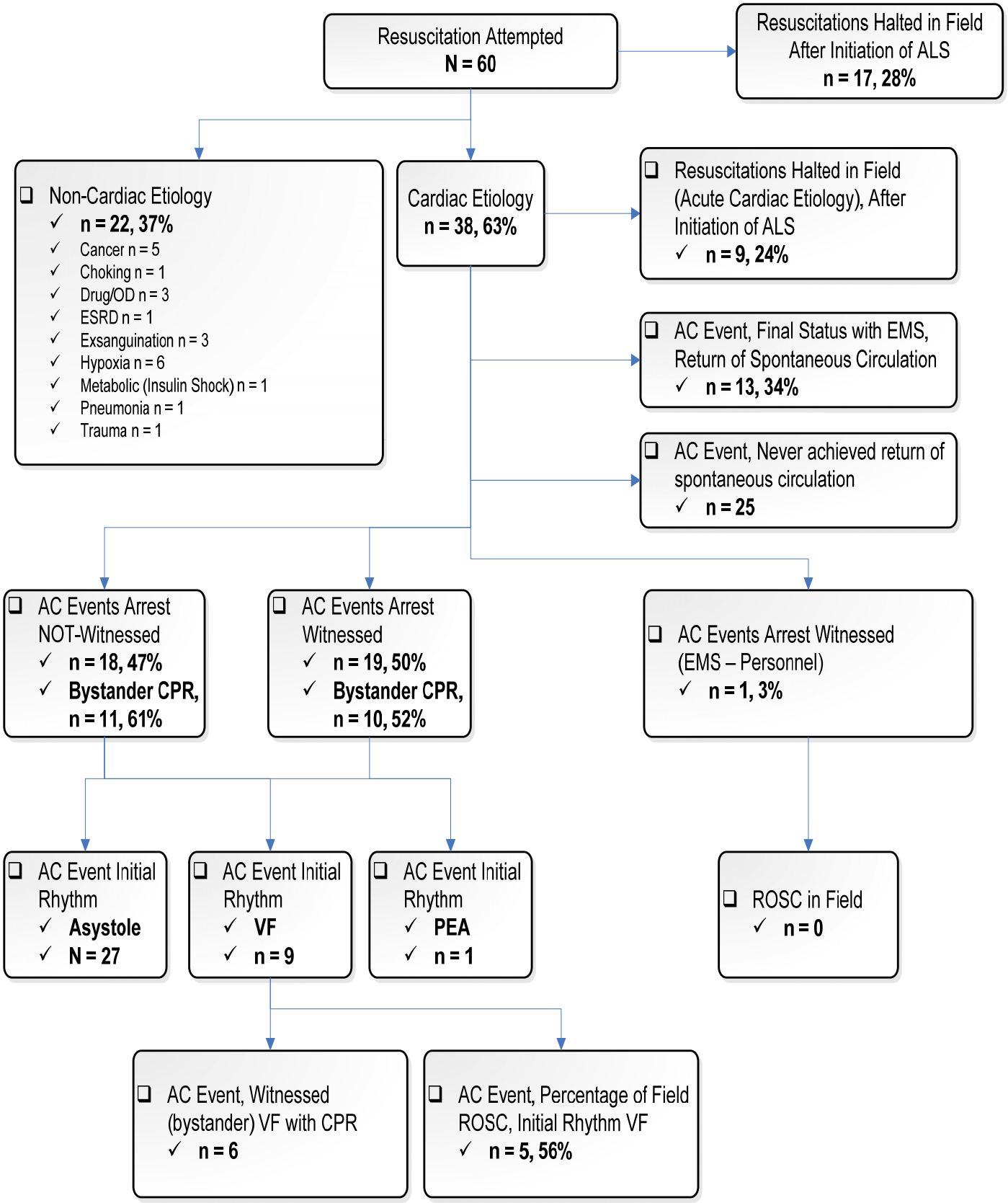
Eighteen (18) patients (47%) had an unwitnessed event. In eighteen (18) unwitnessed cardiac arrest cases, eleven (11) patients received bystander CPR, (***61%***). Five (5) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 28%).

Nineteen (19) patients (50%) had a witnessed event. In nineteen (19) witnessed cardiac arrest cases, ten (10) patients received bystander CPR, (***53%***). Eight (8) 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 42%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of December one (1) patient met the criteria for cardiac arrest witnessed by emergency medical services personnel. This patient was not resuscitated. (Percentage of return of spontaneous in the field from EMS-witnessed cardiac arrest was equal to 0%).

The rhythm on arrival was asystole in 73% (27 patients), ventricular fibrillation in 24% (9 patients), and pulseless electrical activity in 3% (1 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 60 Patients Western Division, December 2010



Summary: Transporting of Patients in Continuing Cardiac Arrest:

Description	Total Number	Nursing Home	Home	Age Range	Average Age	AC Event	Drug / OD	Pneumonia	Hypoxia	Cancer	Exsanguination
Resuscitation not Halted in Field	3	1	2	44 – 80	64	2	N/A	N/A	1	N/A	N/A
Resuscitation Halted in Field	17	5	12	32 – 91	69.76	9	2	1	2	2	1

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

Eastern Division

In the Eastern Division, during the month of December 2010, paramedics managed fifty - three (53) patients in cardiac arrest. After initiating advanced life support, seven (7) resuscitations were halted in the field. Thirty - eight (38, 72%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the fifteen (15, 28%) remaining cases; Cancer three (3) cases; Drug / OD three (3) cases; End – Stage Renal Disease one (1) case; Hypoxia five (5) cases; SIDS one (1) case; Trauma two (2) cases. These fifteen (15) 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, eleven (11) patients were resuscitated in the field. (Percentage of return of spontaneous circulation in the field from an acute cardiac event was equal to 29%).

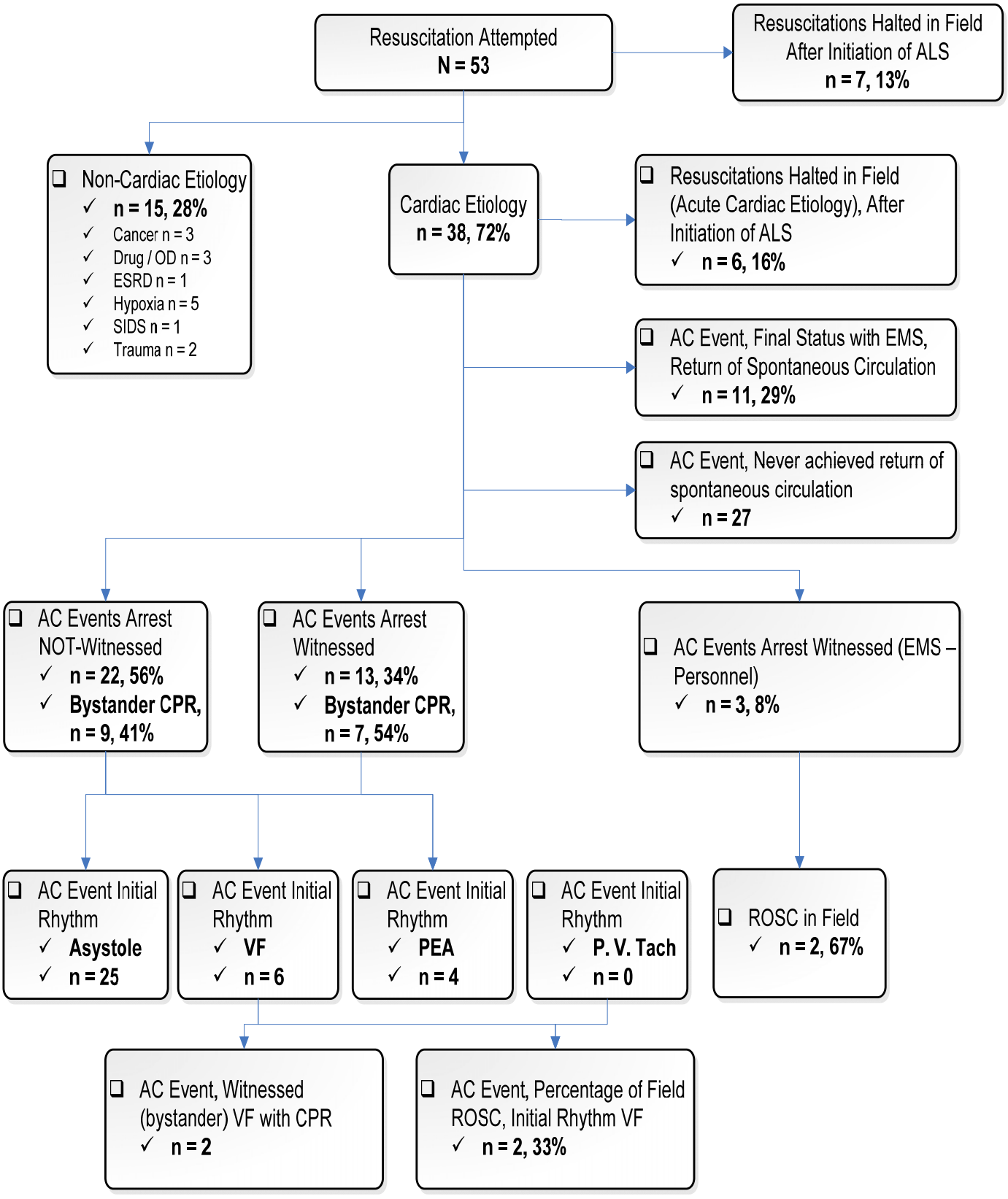
Twenty - two (22) patients (58%) had an unwitnessed event. In twenty - two (22) unwitnessed cardiac arrest cases, nine (9) patients received bystander CPR, (***41%***). Seven (7) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 32%).

Thirteen (13) patients (34%) had a witnessed event. In thirteen (13) witnessed cardiac arrest cases, seven (7) patients received bystander CPR, (***54%***). Two (2) patients were resuscitated. (Percentage of return of spontaneous circulation in the field from a *Non-EMS*-witnessed cardiac arrest was equal to 15%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of December three (3) patients met the criteria for cardiac arrest witnessed by emergency medical services personnel. Two (2) of these patients were resuscitated. (Percentage of return of spontaneous circulation in the field from a *Non-EMS*-witnessed cardiac arrest was equal to 67%).

The rhythm on arrival was asystole in 71% (25 patients), ventricular fibrillation in 17% (6 patients), and pulseless electrical activity in 11% (4 patients). Non-ventricular pulseless rhythm groups appear to represent the majority of patients in whom out-of-hospital resuscitation was attempted, (83% non-ventricular pulseless rhythms vs. 17% ventricular pulseless rhythms).

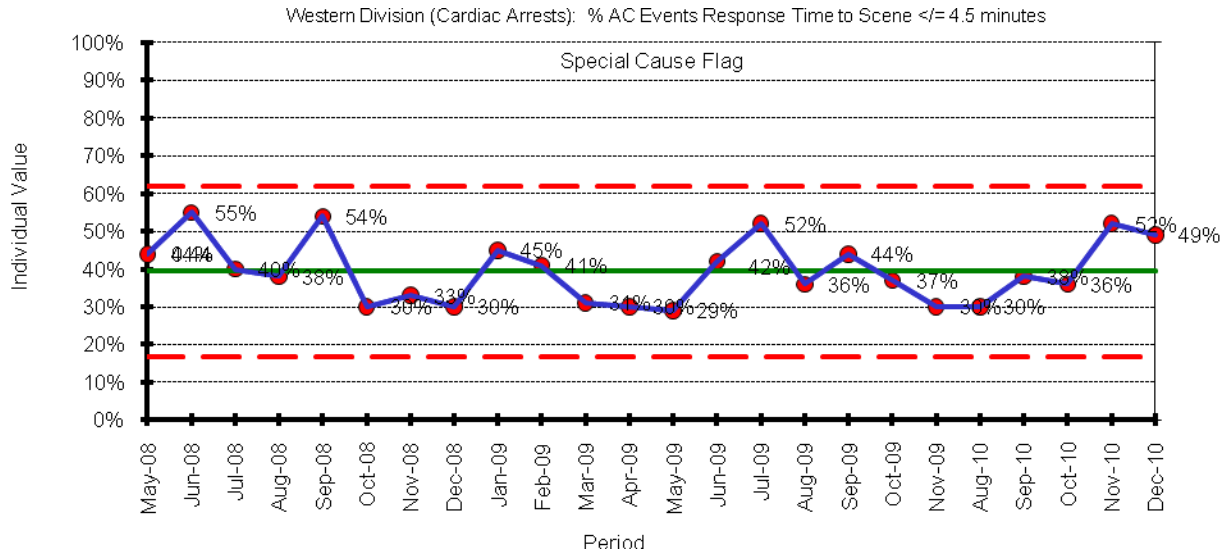
Utstein Style Template Showing Data on Cardiac Arrests in Resuscitation Attempted in 53 Patients Eastern Division, December 2010



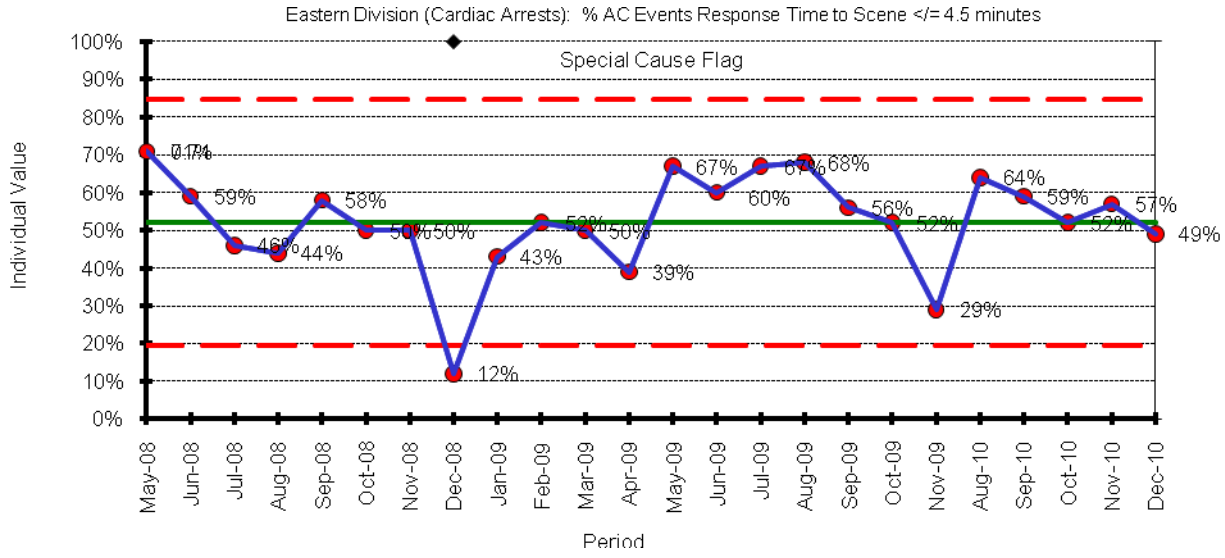
Summary: Transporting of Patients in Continuing Cardiac Arrest:

Description	Total Number	Nursing Home	Home	Age Range	Average Age	AC Event	Hypoxia	Drug/OD
Resuscitation Not Halted in Field	4	2	2	51 - 91	76	3	1	N/A
Resuscitation Halted in Field	7	2	5	23 – 91	73.71	6	N/A	1

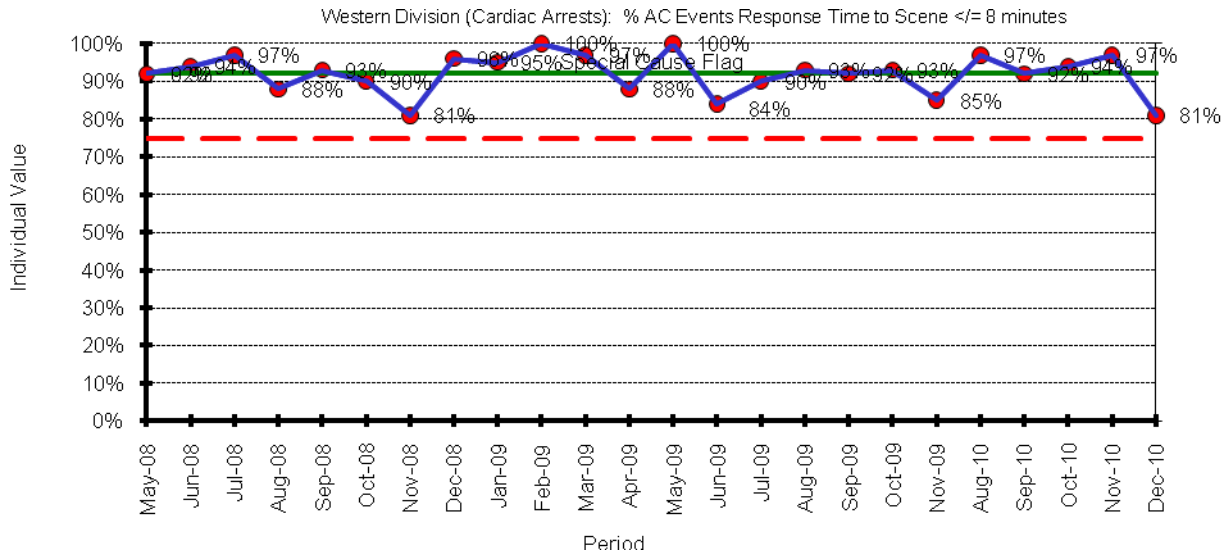
The control charts below ***(% of AC Events Response Time to Scene < / = 4.5 minutes)*** are examples of a stable, in statistical control, process, to explain: *Most* points are near the average; there are a *few* points near the control limits,(the red dash lines); *no* points are beyond the control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



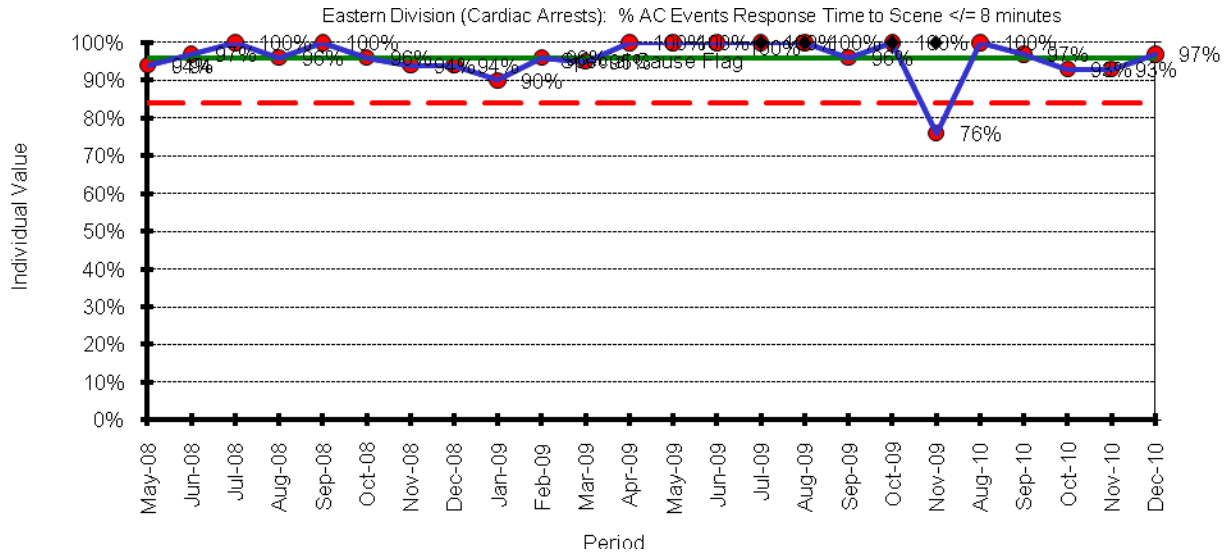
Average of Data Shown: 38%



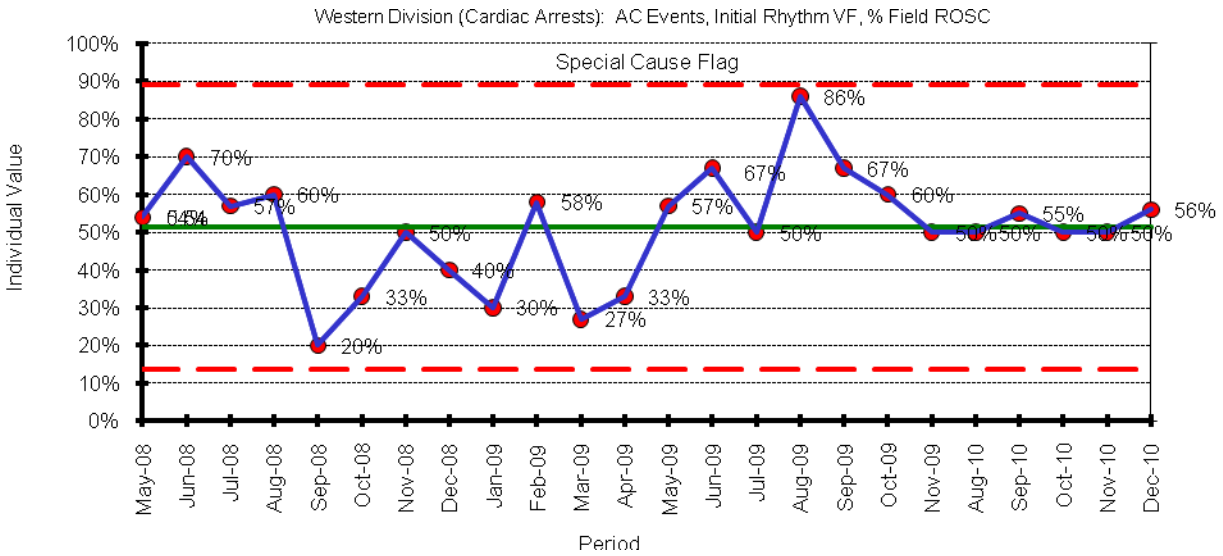
Average of Data Shown: 52%



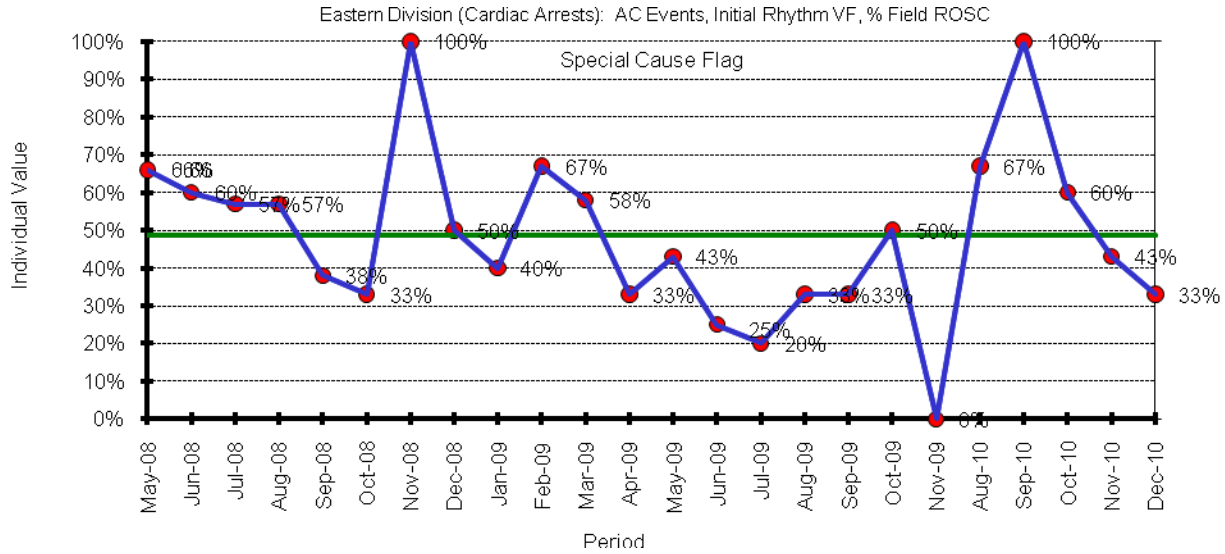
Average of Data Shown: 92%



Average of Data Shown: 96%



Average of Data Shown: 51%



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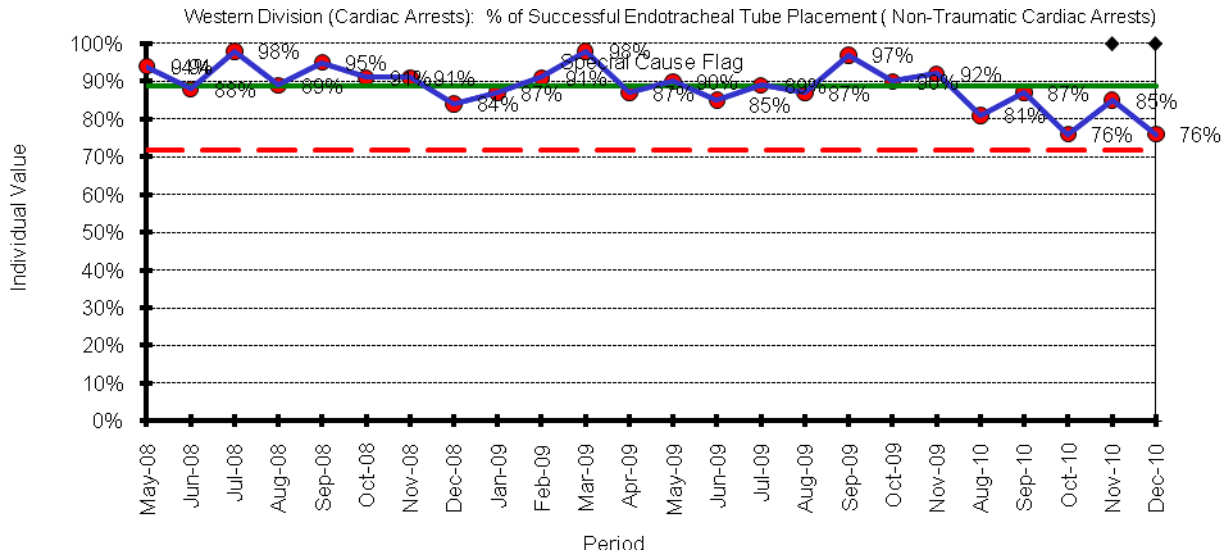
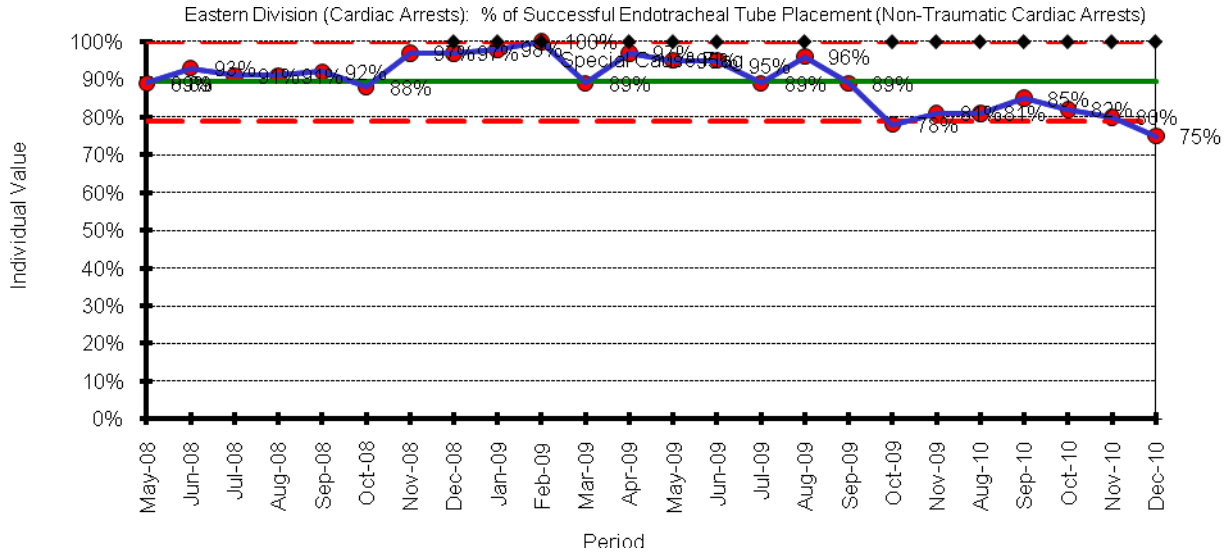
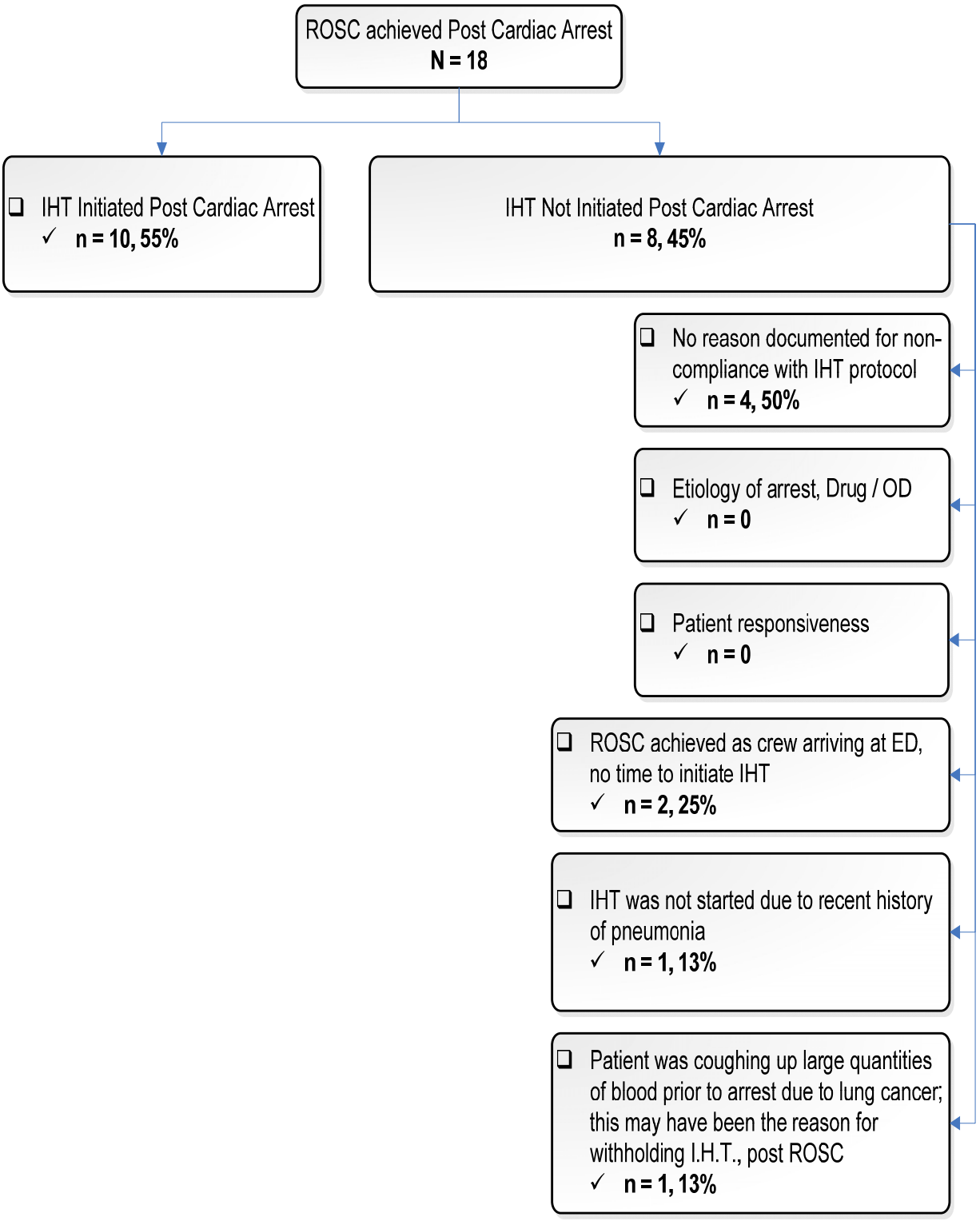
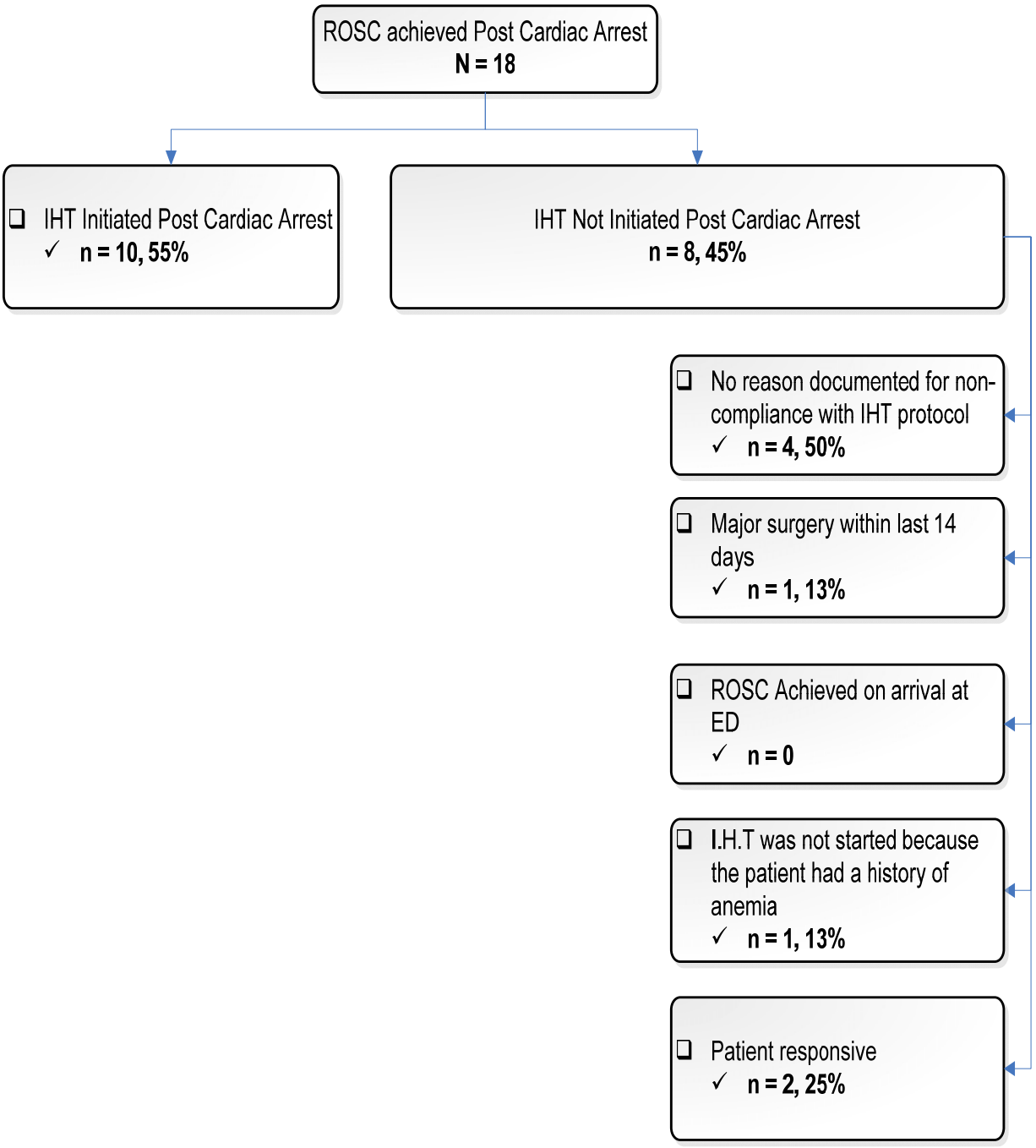


Average of Data Shown: 89%



Average of Data Shown: 89%

Induced Hypothermia Therapy Post Cardiac Arrest: 18 Patients
Western Division, December 2010



Induced Hypothermia Therapy Post Cardiac Arrest: 18 Patients
Eastern Division, December 2010