Cardiac Arrest Registry Database – 2010

Office of the Medical Director

Monthly Statistical Summary Cardiac Arrest, September 2010

Description	Western Division Totals	Western Division %	Eastern Division Totals	Eastern Division%
Total Number of Cardiac Arrests	55		29	
Total Number of Cardiac Arrest: Cardiac Etiology	41	75%	19	66%
Total Number of Cardiac Arrests: Resuscitation Term. Trial ALS	5	7%	5	17%
Resuscitation Not Halted in Field but met Screening Criteria for Term.	10	38%	3	25%
Total Number of Cardiac Arrests: Non-Cardiac Etiology	14	38%	10	34%
Total Field ROSC, AC Event:	13	32%	9	47%
Total Field ROSC Regardless of Etiology	15	27%	12	41%
Cardiac Arrest Not-Witnessed, AC Event	18	44%	14	74%
Cardiac Arrest Not-Witnessed, AC Event, ROSC	4	22%	6	43%
Cardiac Arrest Bystander Witnessed, AC Event	21	51%	3	16%
Cardiac Arrest Bystander Witnessed, AC Event, ROSC	8	38%	1	33%
Total Bystander CPR, AC Event	19	48%	9	53%
EMS Witnessed Cardiac Arrest, AC Event	2	5%	2	11%
EMS Witnessed Cardiac Arrest, AC Event, ROSC	1	50%	0	0%
Rhythm on Arrival: Non-Ventricular Group, (Asystole/PEA), AC Event	30	77%	15	92%
Rhythm on Arrival: Ventricular Group, (VF/Pulseless/VT)	9	23%	2	7%
Field ROSC from VF, AC Event	5	55%	2	100%
ETT successfully placed/Cardiac Arrest	46	87%	22	85%
Capnography attached to ETT	46	100%	22	100%
Average time from ETT placement to ETCO2 Attachment	:32	87% (< 60secs)	:32	91% (< 60 secs)
Intravenous/Intraosseous Access/Cardiac Arrest	54	98%	29	100%
FD On Scene 1st/All Cardiac Arrests/Non-EMS-Witnessed	33	67%	16	64%
Response Time to the Scene < 4.5 minutes	15	38%	10	59%
Defibrillation Report: Shock Time < 6 minutes	1	11%	0	0%
Defibrillation Report: Shock Time < 7 minutes	4	44%	0	0%
Defibrillation Report: Shock Time > 7 minutes	6	55%	2	100%
VF, Bystander CPR	4	44%	0	0%
Site of Cardiac Arrest Regardless of Etiology, (Home)	36	65%	16	55%
Control Chart Summary Description	**Current Month 9/10 Western Division**	**25 month data average, Western Division**	**Current Month 9/10 Eastern Division**	**25 month data average, Eastern Division**
% of Bystander CPR/AC Event	49%	49%	53%	44%
% AC Events Response Time to Scene < 4.5 minutes	38%	40%	59%	54%
% AC Events Initial Rhythm VF/DF Time < 6 minutes	11%	11%	0%	11%
% Return of Spontaneous Circulation from AC Event	32%	31%	33%	33%
% of Field ROSC/VF Initial Rhythm/AC Event	55%	48%	100%	50%
Total Number of Cardiac Arrests/Non-EMS Witnessed	49	40	25	32
% of AC Events/Initial Rhythm VF/Pulseless VT	23%	30%	7%	24%
% of Cardiac Arrests/FD On-Scene 1st	67%	65%	64%	57%
% of AC Events Response Time to Scene </= 8 minutes	92%	92%	97%	97%
% of Successful ETT Placement (Non-Traumatic Cardiac Arrests)	87%	90%	85%	92%
% Cardiac Arrests @ Nursing Homes	11% (6)	12%	31% (9)	15%
%ETCO2 Attachment in < / = 60 seconds from the time of ETT Insertion	87%	78%	91%	60%
% of Cardiac Arrest that occur at Home	65%	69%	55%	66%
Average Age/Acute Cardiac Arrest/Non-EMS Witnessed Etiology: Acute Cardiac Event	66	65	67	65
Resus. Discon. in the Field After Trial ALS That Met Protocol Criteria	33%	48%	63%	63%

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

Western Division

In the Western Division, during the month of September 2010, paramedics managed fifty - five, (55) patients in cardiac arrest. After initiating advanced life support, five (5) resuscitations were halted in the field. Forty - one (41), 75%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the fourteen (14, 25%) remaining cases; Cancer one (1) case; Choking one (1) case; Drowning one (1) case; Drug/OD two (2) cases; Exsanguination (1) case; Hypoxia three (3) cases; Intoxication two (2) cases; Metabolic one (1) case; Trauma two (2) cases. These fourteen (14) cases were excluded from this review because they were cases of non-cardiac etiology.

Of the forty - one (41) 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 32%)

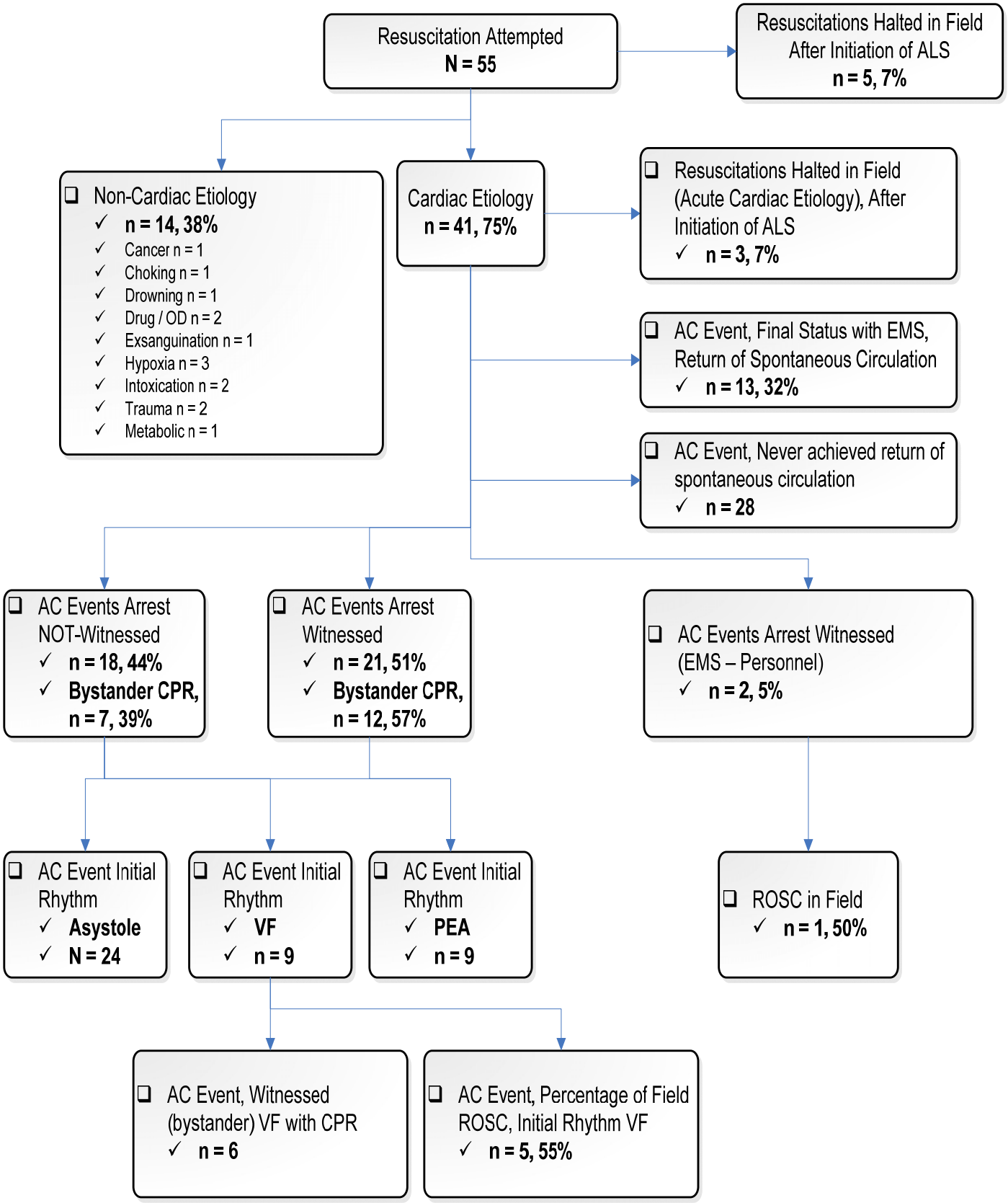
Eighteen (18) patients (44%) had an unwitnessed event. In eighteen (18) unwitnessed cardiac arrest cases, seven (7) patients received bystander CPR, (***39%***). Four (4) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 22%).

Twenty - one (21) patients (51%) had a witnessed event. In twenty - one (21) witnessed cardiac arrest cases, twelve (12) patients received bystander CPR, (***57%***). 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 38%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of September two (2) 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 50%).

The rhythm on arrival was asystole in 62% (24 patients), ventricular fibrillation in 23% (9 patients), and pulseless electrical activity in 15% (6 patients). Non-ventricular pulseless rhythm groups appear to represent the majority of patients in whom out-of-hospital resuscitation was attempted, (77% non-ventricular pulseless rhythms vs. 23% ventricular pulseless rhythms).

Utstein Style Template Showing Data on Cardiac Arrests in Resuscitation Attempted in 55 Patients Western Division, September 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	10	2	9	56 – 89	72.5	9	N/A	1	N/A	N/A	N/A	N/A
Resuscitation Halted in Field	5	1	4	45 – 90	63.6	3	1	N/A	N/A	1	N/A	N/A

Office of the Medical Director
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September 2010
Cardiac Arrest

Eastern Division

In the Eastern Division, during the month of September 2010, paramedics managed twenty - nine (29) patients in cardiac arrest. After initiating advanced life support, five (5) resuscitations were halted in the field. Nineteen (19, 66%) patients, who experienced cardiac arrest, case definition indicated that the arrest was presumably caused by heart related disease. In the ten (10, 34%) remaining cases; Drowning one (1) case; Drug / OD four (4) cases; End – Stage Renal Disease one (1) case; Exsanguination one (1) case; Hypoxia three (3) cases. These ten (10) 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, nine (9) patients were resuscitated in the field. (Percentage of return of spontaneous circulation in the field from an acute cardiac event was equal to 47%).

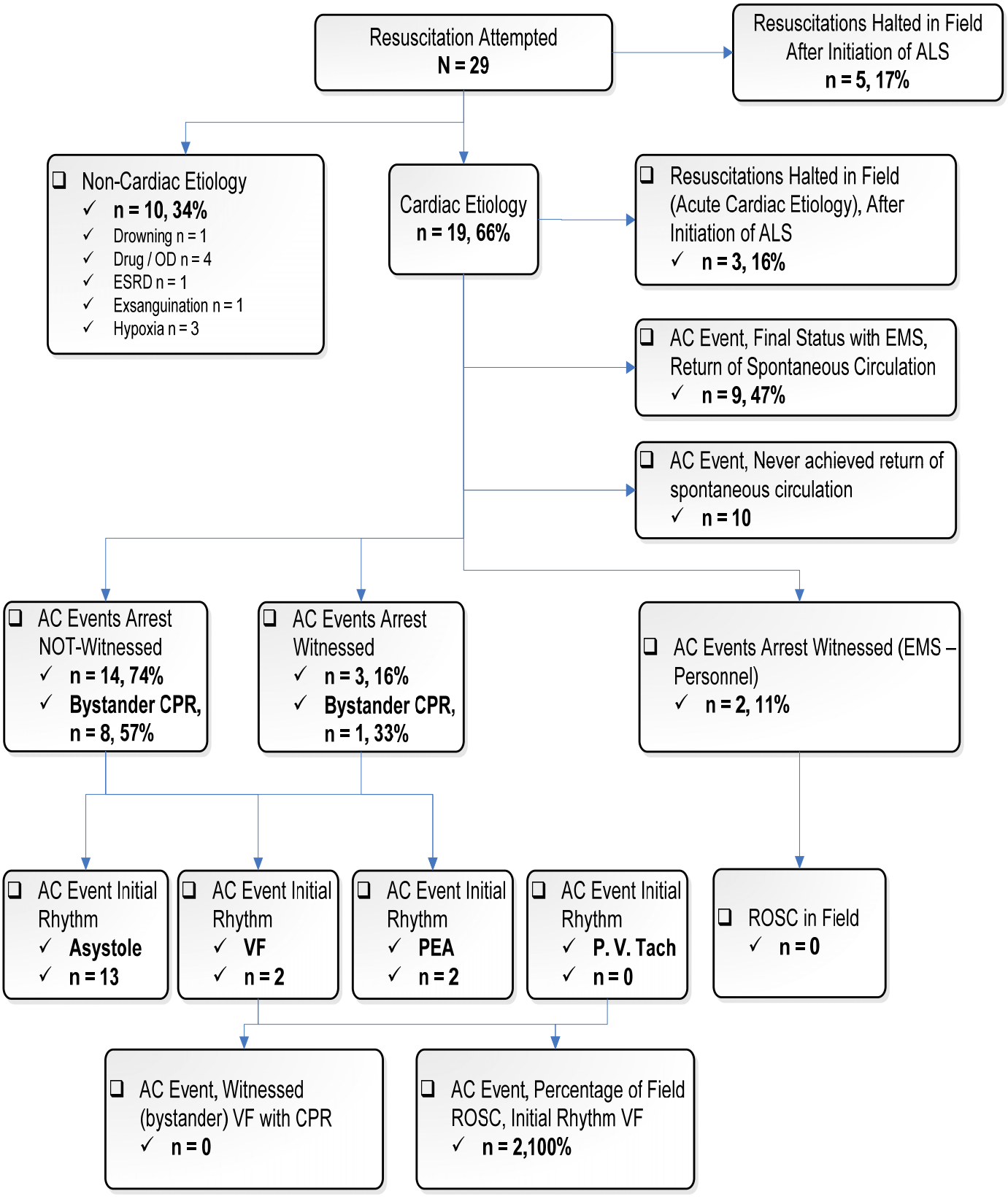
Fourteen (14) patients (74%) had an unwitnessed event. In fourteen (14) unwitnessed cardiac arrest cases, eight (8) patients received bystander CPR, (***57%***). Six (6) patients were resuscitated in the field who suffered an unwitnessed cardiac arrest. (Percentage of return of spontaneous circulation in the field from an unwitnessed cardiac arrest was equal to 43%).

Three (3) patients (16%) had a witnessed event. In three (3) witnessed cardiac arrest cases, one (1) patient received bystander CPR, (***33%***). Three (3) patients were resuscitated. (Percentage of return of spontaneous circulation in the field from a *Non-EMS*-witnessed cardiac arrest was equal to 100%).

EMS-witnessed cardiac arrest cases are clearly an important subset of out-of-hospital resuscitation. During the month of September two (2) 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 85% (13 patients), ventricular fibrillation in 7% (2 patients), and pulseless electrical activity in 7% (2 patients). Non-ventricular pulseless rhythm groups appear to represent the majority of patients in whom out-of-hospital resuscitation was attempted, (92% non-ventricular pulseless rhythms vs. 7% ventricular pulseless rhythms).

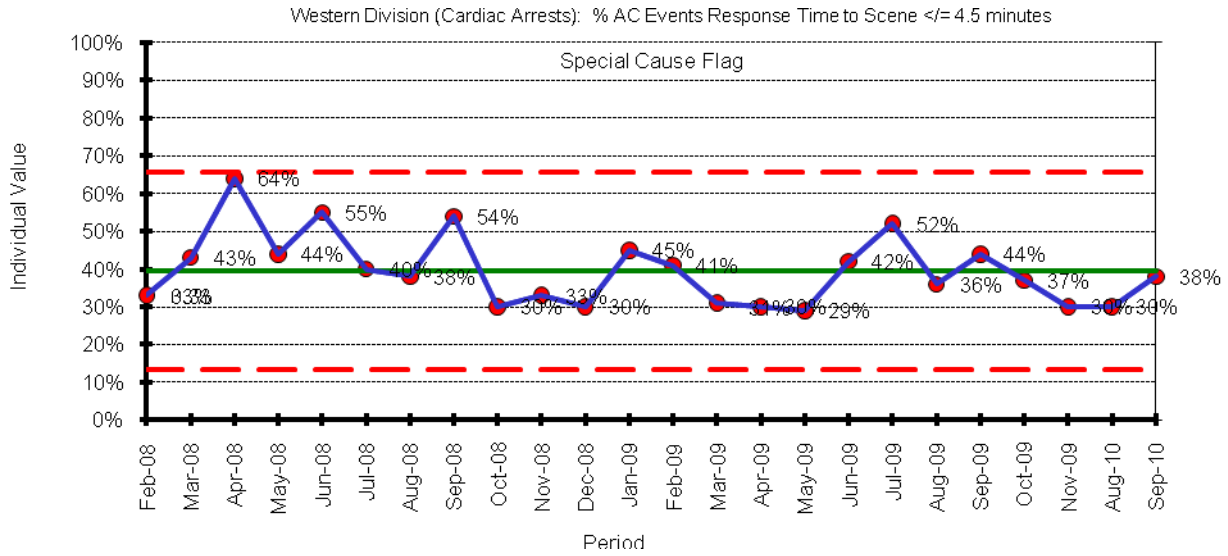
Utstein Style Template Showing Data on Cardiac Arrests in Resuscitation Attempted in 34 Patients Eastern Division, September 2010



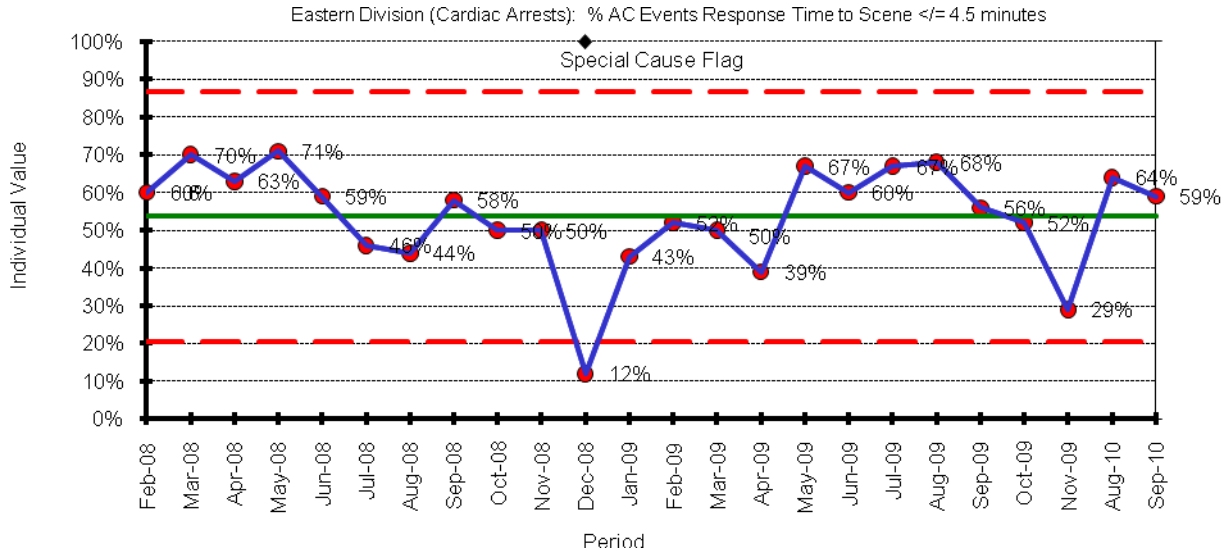
Summary: Transporting of Patients in Continuing Cardiac Arrest:

Description	Total Number	Nursing Home	Home	Age Range	Average Age	AC Event	Metabolic	Drug/OD	Complications with Alzheimer's Disease	Hypoxia	Complications with Obesity
Resuscitation Not Halted in Field	3	0	3	51 - 68	60	3	N/A	N/A	N/A	N/A	N/A
Resuscitation Halted in Field	5	3	2	58 – 97	71.4	3	N/A	1	N/A	1	N/A

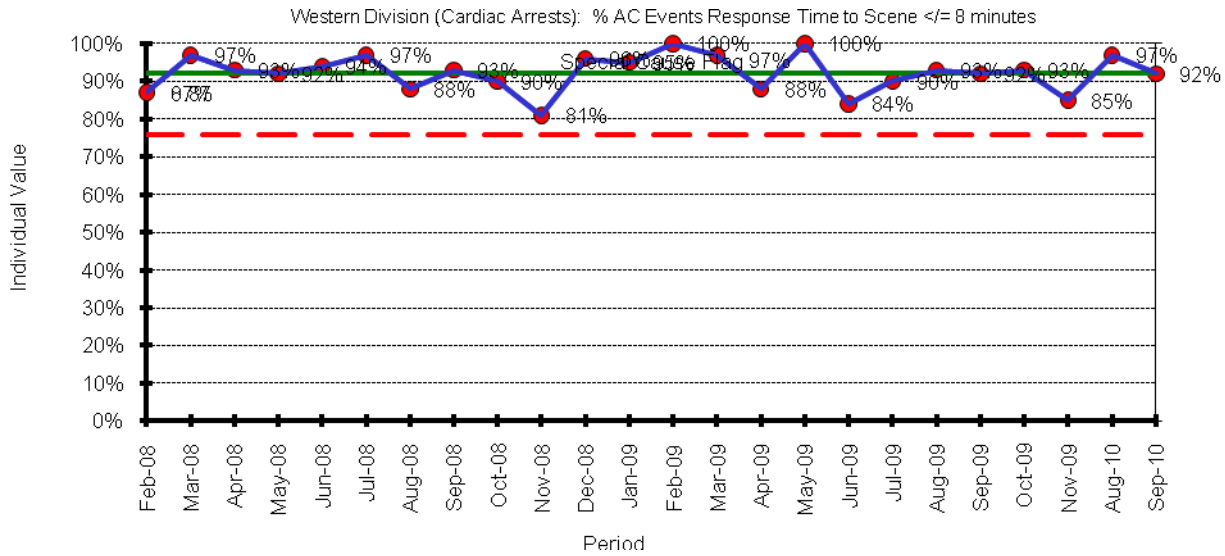
The control charts below ***(% of AC Events Response Time to Scene < / = 4.5 minutes)*** are examples of a stable, in statistical control, process, to explain: *Most* points are near the average; there are a *few* points near the control limits,(the red dash lines); *no* points are beyond the control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



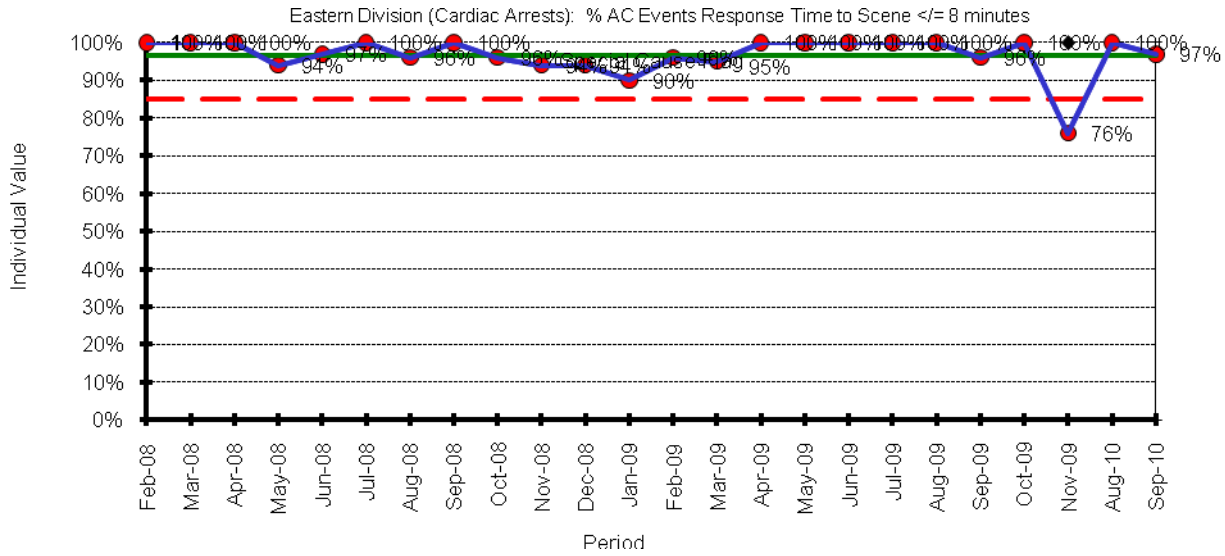
Average of Data Shown: 40%



Average of Data Shown: 54%

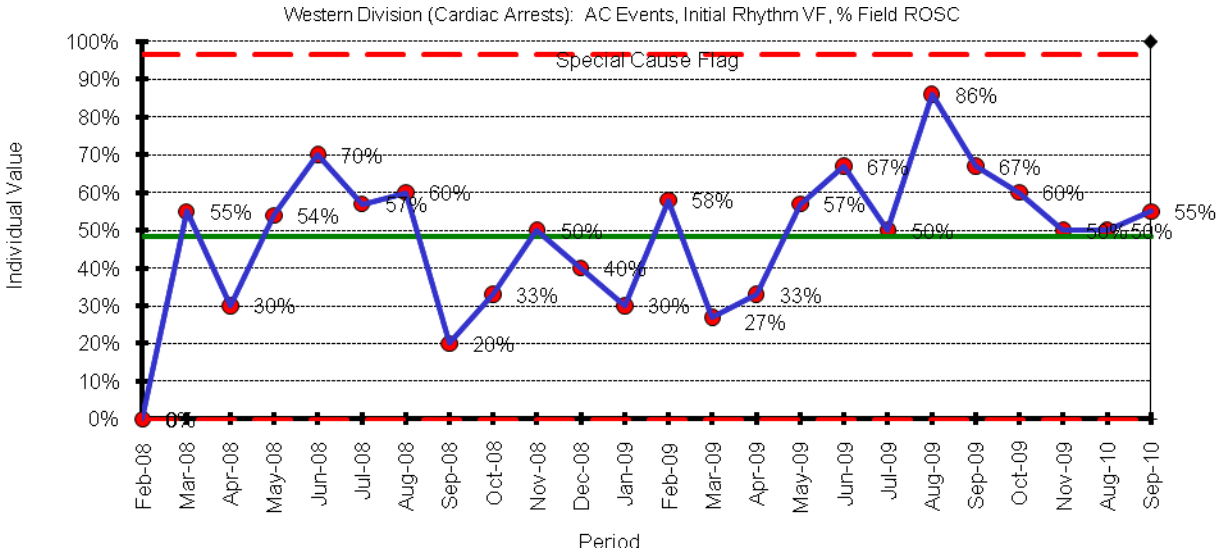


Average of Data Shown: 92%

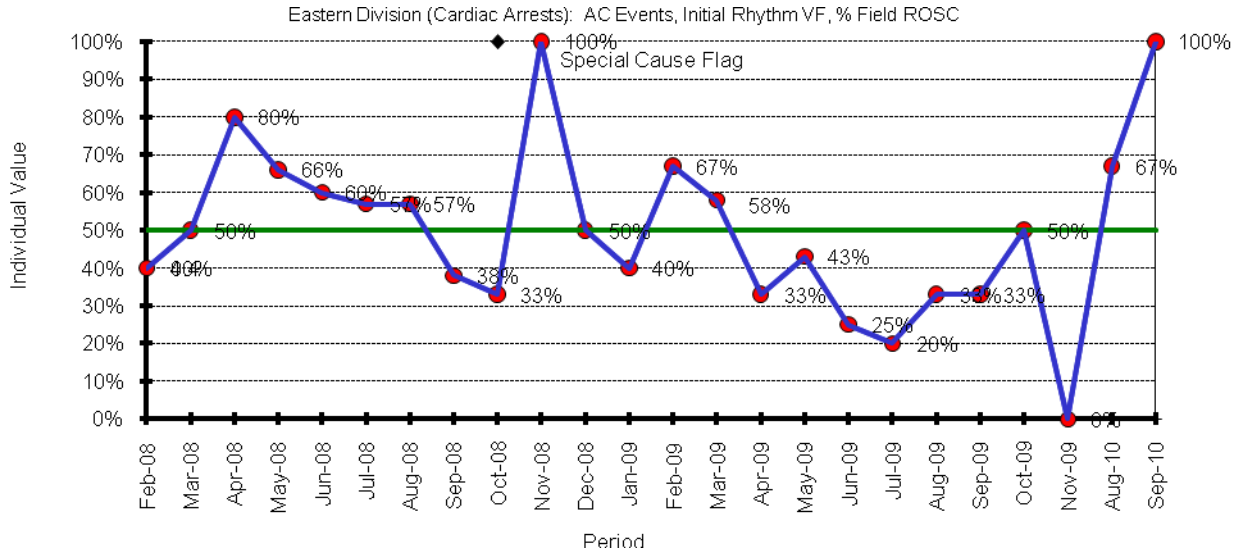


Average of Data Shown: 97%

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: 48%



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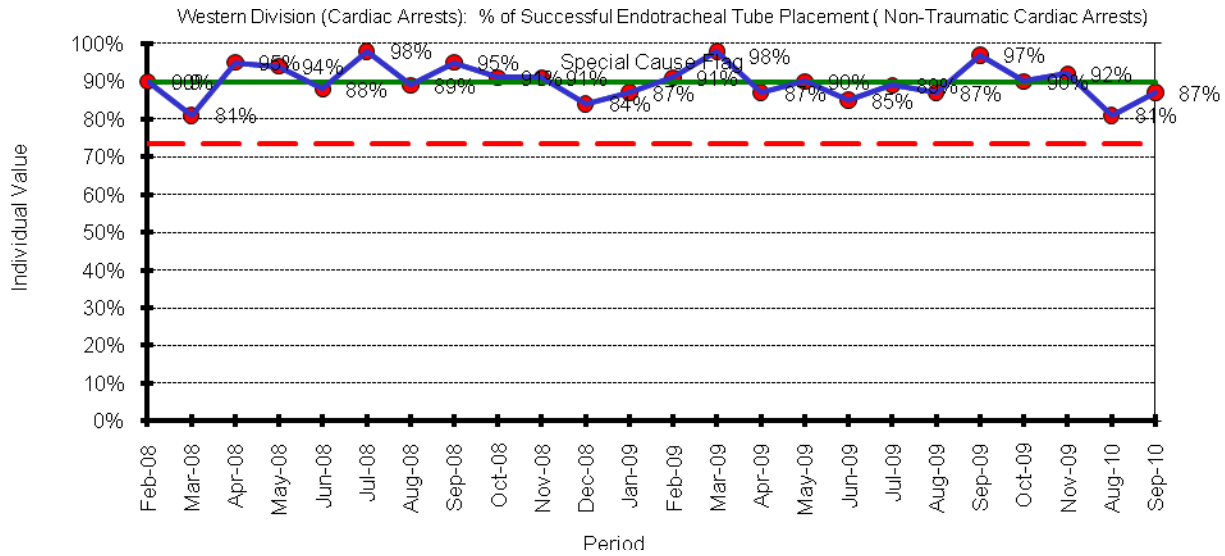
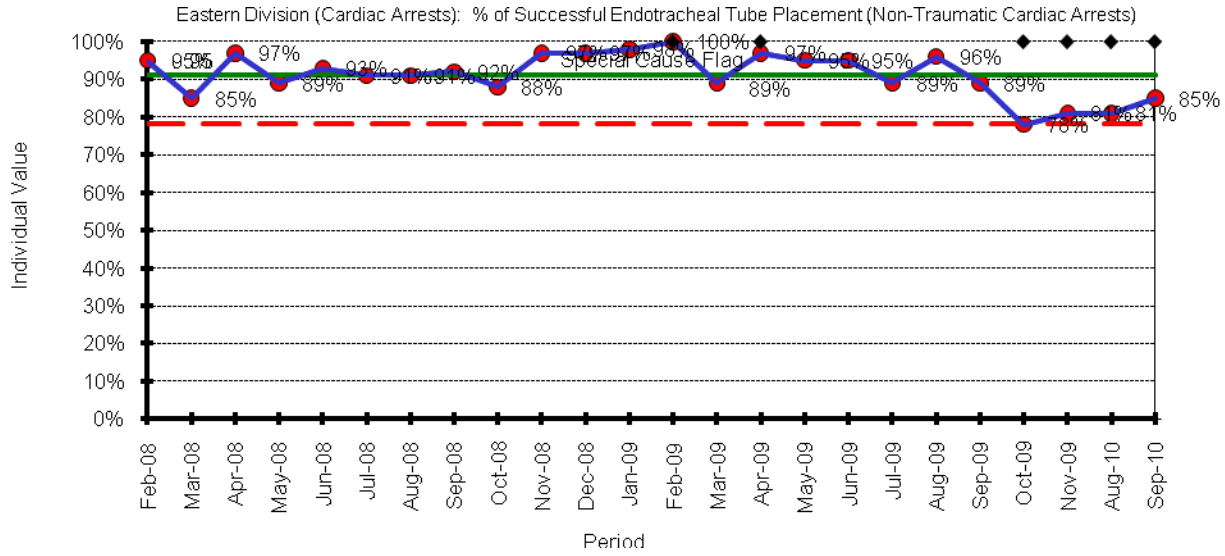
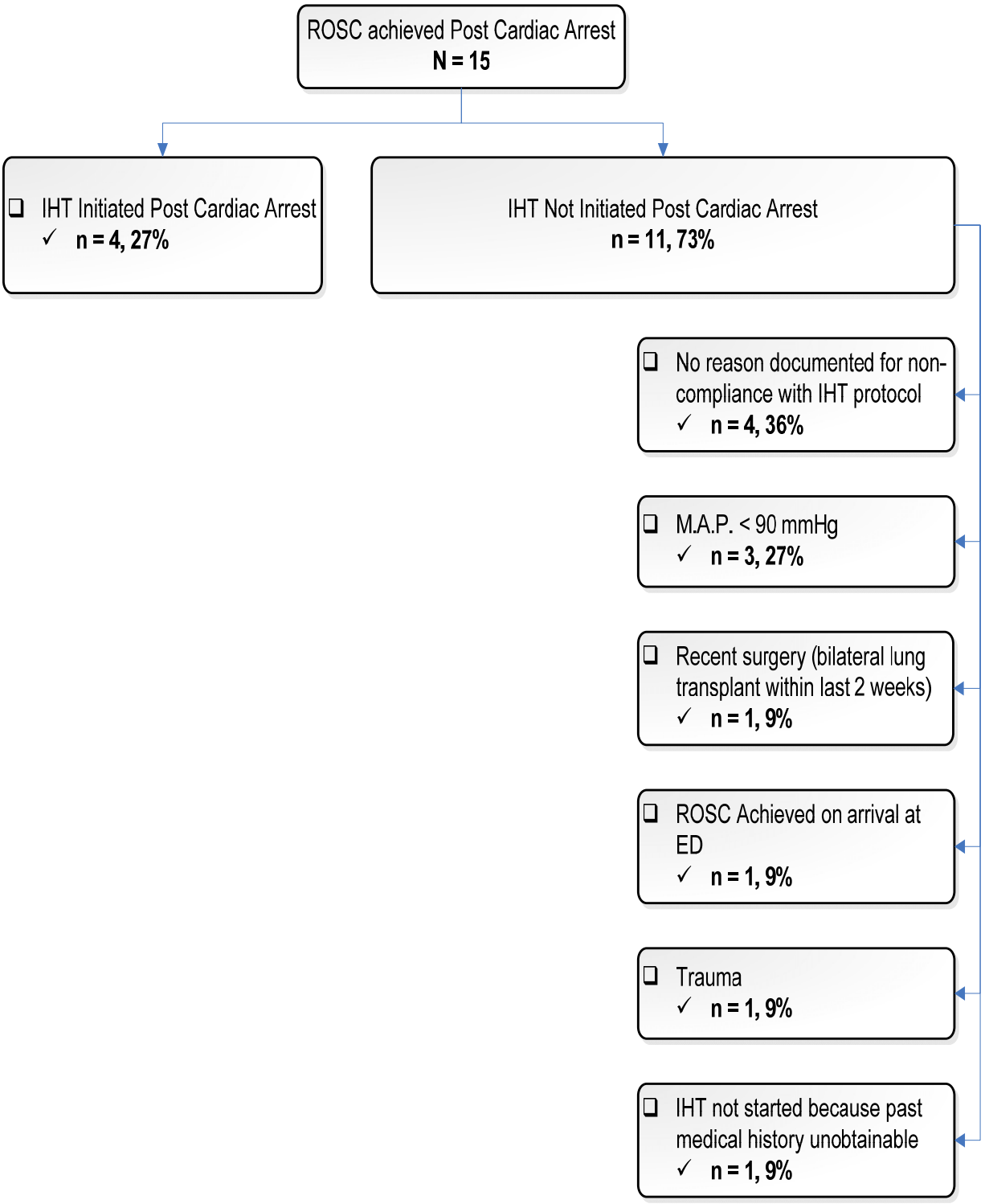
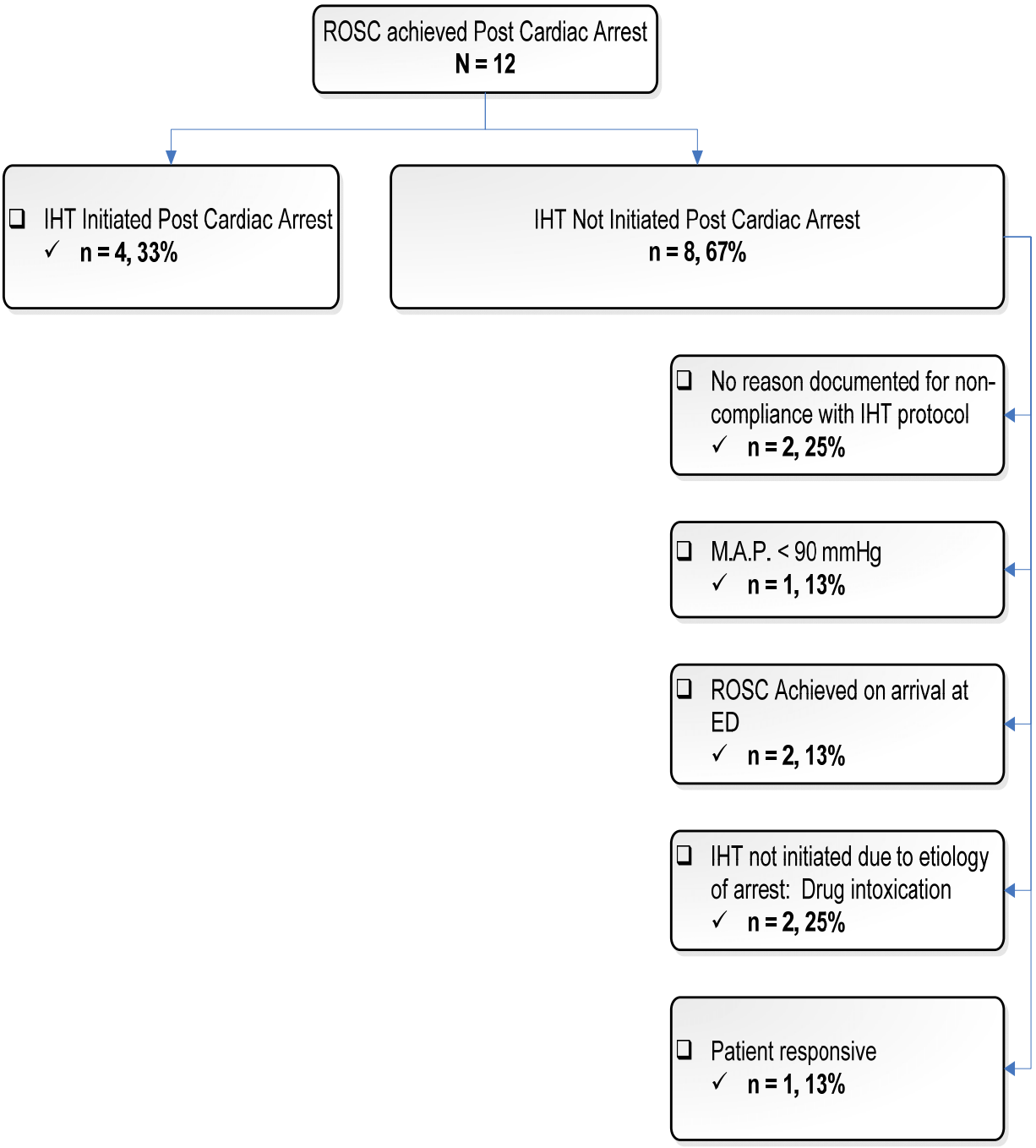


Average of Data Shown: 90%



Average of Data Shown: 92%

Induced Hypothermia Therapy Post Cardiac Arrest: 15 Patients
Western Division, September 2010



Induced Hypothermia Therapy Post Cardiac Arrest: 12 Patients
Eastern Division, September 2010