

Case Scenarios

JJ 3950684732

Date of arrival 1/2/13

59-year-old woman presenting to the Emergency Department after a motor vehicle collision. She was a restrained driver in a Fiat which collided into a tree at a high rate of speed. Air bags were deployed. She was pinned in the vehicle and there was a prolonged extrication of an hour and 45 minutes due to entrapment of her right foot. She was noted to have an open left femur fracture and a fair amount of bleeding in the field. She arrived to the Emergency Department on a backboard in cervical spine collar. She states that she has pain in bilateral legs. She denies any abdominal pain or chest pain. She denies any back pain or neck pain. She reports that she does not remember the events of the accident. She denies any alcohol use. Patient does have a history of seizure disorder; however, she reports she has not had any recent seizures and she has been compliant with her Dilantin.

REVIEW OF SYSTEMS: Unable to obtain due to clinical condition.

PAST MEDICAL HISTORY: Seizure disorder and atrial fibrillation.

PAST SURGICAL HISTORY:

1. Breast augmentation.
2. Thyroid surgery.
3. Temporal Lobectomy

ALLERGIES: None.

HOME MEDICATIONS: Dilantin 300 milligrams per day. Pradaxa 150 milligrams twice a day.

FAMILY HISTORY: Negative for bleeding disorders.

SOCIAL HISTORY: Patient is married. She reports 1-pack-a-day tobacco use, rare alcohol use, no recreational or street drug use.

PHYSICAL EXAM:

Dictation cut off.

ABDOMEN/PELVIS CT

IMPRESSION:

1. Horseshoe kidney. Demonstration of parenchymal laceration involving the medial cortex of the left renal moiety associated with large left perinephric hematoma along the medial aspect. There is high attenuation material noted within the perinephric hematoma suggesting active extravasation with vascular injury.

Delayed excretory phase imaging through the kidneys demonstrates high attenuation material outside of the collecting system adjacent to the site of laceration along the medial aspect of the left renal moiety suggesting calyceal injury. Findings suggestive of grade 4 renal injury of the left renal moiety of the horseshoe kidney.

2. Delayed imaging through bladder with optimal opacification shows no

extravasation of the contrast to suggest urinary bladder injury

3. No evidence of intraperitoneal free fluid or hematoma or extraluminal gas.

4. No evidence of acute displaced fracture of the lumbar spine or the pelvis.

5. Please see separately dictated CT chest report for thoracic findings including thoracic spine.

Question 1

Based on the information listed above what comorbidities are present?

1. _____
2. _____
3. _____
4. _____

JM 3492304858

Date of arrival 7/22/12

35yo male s/p MVC ejected from car on 7/21 w/TBI, small punctate intracranial hemorrhages , right ICA dissection , right C7 transverse process fracture, 8,12 R rib fractures, comminuted fracture of the left calcaneus and multiple facial fractures (crista galli, cribriform plate, anterior cranial fossa floor, right orbital floor fracture, nasal septum). Patient stabilized on ventilator and weaning appropriately. Now s/p ORIF of facial fx by OMS.

Review of Systems: Unable to obtain

Home Medications: Unknown.

Allergies and Intolerances: Unknown

Past Medical History: Unknown.

Past Surgical History: Unknown.

Family/Social: Unknown

Vitals for 08/06/2012

Temp: 37.3

Heart Rate: 103

Resp Rate: 21

BP: 114/64

O2 Sat: 97% SIMV 30%

Nutrition: TF's @ 75cc/hr

Physical Exam

General: Intubated, sedated

HENT: Grossly normocephalic, trach collar in place. ETT, OG, dobhoff.

CV: RRR w/out MRG

Resp: Mechanical breath sounds limited exam, no wheezes or crackles

GI/ABD: Firm, mildly distended, no indication of tenderness or guarding.

GU: Foley draining clear yellow urine.

MS: LUE soft cast, RUE mit restraint, LLE soft cast

Skin: No ulcers, rashes or lesions

Neuro: Sedated, unable to assess.

All other physical exams during the next 10 days in the ICU indicate the same/similar examination.

Cultures:

ACCN: 12-299-06225	QRESPG	QUANT RESPIRATORY CULT/SMR	Updated:07/30/2012 08:23	<input type="checkbox"/>
Collected:07/27/2012 15:17		Source:BRONCHO-ALVE BAL		
----- GRAM STAIN SMEAR -----				
FEW POLYMORPHONUCLEAR LEUKOCYTES			07/27/12 1713	

NO ORGANISMS SEEN		
----- FINAL REPORT -----		
07/30/12 0822		
CULTURE YIELDS >10,000 CFU/ML ENTEROBACTER CLOACAE		
Avoid 2nd and 3rd generation cephalosporins and penicillin-based antibiotics for the treatment of moderate-severe Enterobacter and Citrobacter infections. These organisms could produce an inducible beta-lactamase that confers resistance to cefuroxime, ceftriaxone, and ceftazidime.		
----- SUSCEPTIBILITIES -----		
E CLOAC		
CEFEPIME	MIC VALUE	<=1
	INTERP	S
PIPER/TAZOB	MIC VALUE	2
	INTERP	S
CEFAZOLIN	MIC VALUE	>=64
	INTERP	R
CEFTRIAZONE	MIC VALUE	<=1
	INTERP	S
AZTREONAM	MIC VALUE	<=1
	INTERP	S
MEROPENEM	MIC VALUE	<=0.25
	INTERP	S
GENTAMICIN	MIC VALUE	<=1
	INTERP	S
TOBRAMYCIN	MIC VALUE	<=1
	INTERP	S
AMIKACIN	MIC VALUE	<=2
	INTERP	S
TRIMETH/SULFA	MIC VALUE	<=1
	INTERP	S
CIPROFLOXACIN	MIC VALUE	<=0.25
	INTERP	S
LEVOFLOXACIN	MIC VALUE	<=0.12
	INTERP	S

Chest X-Rays:

07/22/2012 through 07/24/2012

Low lung volumes. Positioning limiting evaluation. Unchanged position ET tube. No acute process.

07/25/2012 02:20:57

Low lung volumes. Linear opacity at the right lung base, may represent atelectasis, however contusion is possible given history of trauma. Left lung is clear. No pneumothorax.

07/25/2012 06:49:08

1. Increased right basilar opacity may be a combination of small pleural effusion and worsening right lower lobe collapse, likely distal to a mucous plug.

2. No other interval change.

07/25/2012 22:42:07

Tiny right pleural effusion. Persistent but improved atelectasis in the right lower lobe.

07/28/2012 07:23:04

1. Endotracheal tube, nasogastric tube, and right PICC line all remain in place.

2. There is new increased opacity in the right upper lung, particularly in the suprahilar region. There is also evidence of volume loss on the right with elevation of the right hemidiaphragm. These findings would suggest atelectatic changes involving the right upper lobe.

3. Additional streaky and hazy opacities are seen in the remaining right lung which also likely represent areas of atelectasis.

4. There now appears to be a tiny right pleural effusion.

5. The exam is otherwise unremarkable. The left lung remains clear. There is no evidence of a pneumothorax.

07/29/2012 07:47:48

1. Endotracheal tube remains in place with its tip approximately 9.5 cm above the carina. Nasogastric tube extends into the stomach. Right PICC line is in place with its tip in the mid to lower superior vena cava.

2. Increased basilar opacities are seen with obscuration of the costophrenic angles. These findings would be compatible with small bilateral pleural effusions and associated basilar airspace changes, likely atelectasis. These findings have increased when compared with the previous exam.

3. The exam is otherwise unremarkable. No other acute abnormalities are seen. There is no evidence of a pneumothorax.

Question 2

Does this patient meet the criteria for pneumonia? (Circle one)

Yes / No

Why or why not?

KC 3249082340

Date of arrival: 3/4/12

83-year-old male with a history of A-fib, who is not on Coumadin, presenting to the Emergency Department after having a mechanical fall and injuring his left shin and right chest wall while salsa dancing.

During his hospitalization, DVT scan demonstrates acute brachial and axillary vein DVT's on 3/10/12. There is no mention of the DVT's in the daily progress notes. He has no procedures performed during his stay. Patient's only medications during his stay are Tylenol and Colace. He is discharged on these medications only on 3/11/12.

Question 3

Does this patient meet criteria for DVT? (Circle one)

Yes / No

Why or why not?

DC 3242890380432

Date of arrival: 3/4/12

84-year-old female with a history of A-fib, who is not on Coumadin, presenting to the Emergency Department after having a mechanical fall and injuring his right shin, left chest wall, and right occiput after her husband and her were salsa dancing.

During her hospitalization, DVT scan demonstrates acute subclavian vein DVT on 3/6/12. There is no mention of the DVT in the daily progress notes. Neurology feels she has exam consistent with clinical brain death. Family agrees with care withdrawal. Her only inpatient medication of metoprolol is discontinued, she is extubated, and expires.

Question 4

Does this patient meet criteria for DVT? (Circle one)

Yes / No

Why or why not?



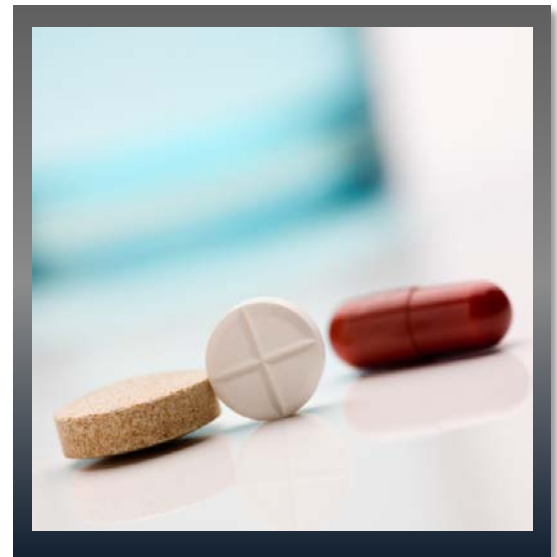
M·TQIP

Jill Jakubus

June 4, 2013

Agenda

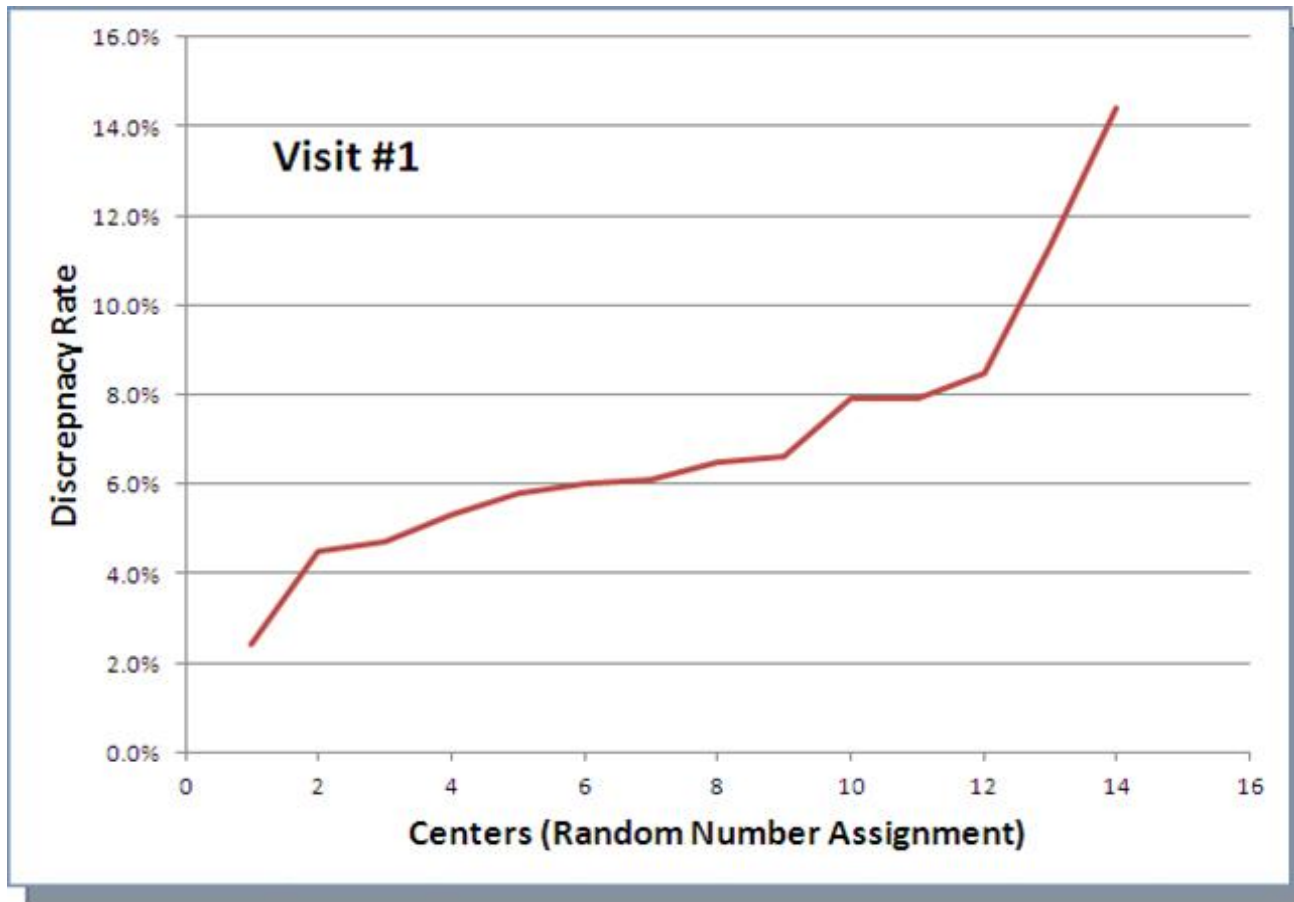
- 1 Validation Updates
- 2 Key Definition Review
- 3 Case Scenarios
- 4 Protective Measures
- 5 New Updates



M·TQIP

Validation Results

General Validation



M•TQIP

Validation Results

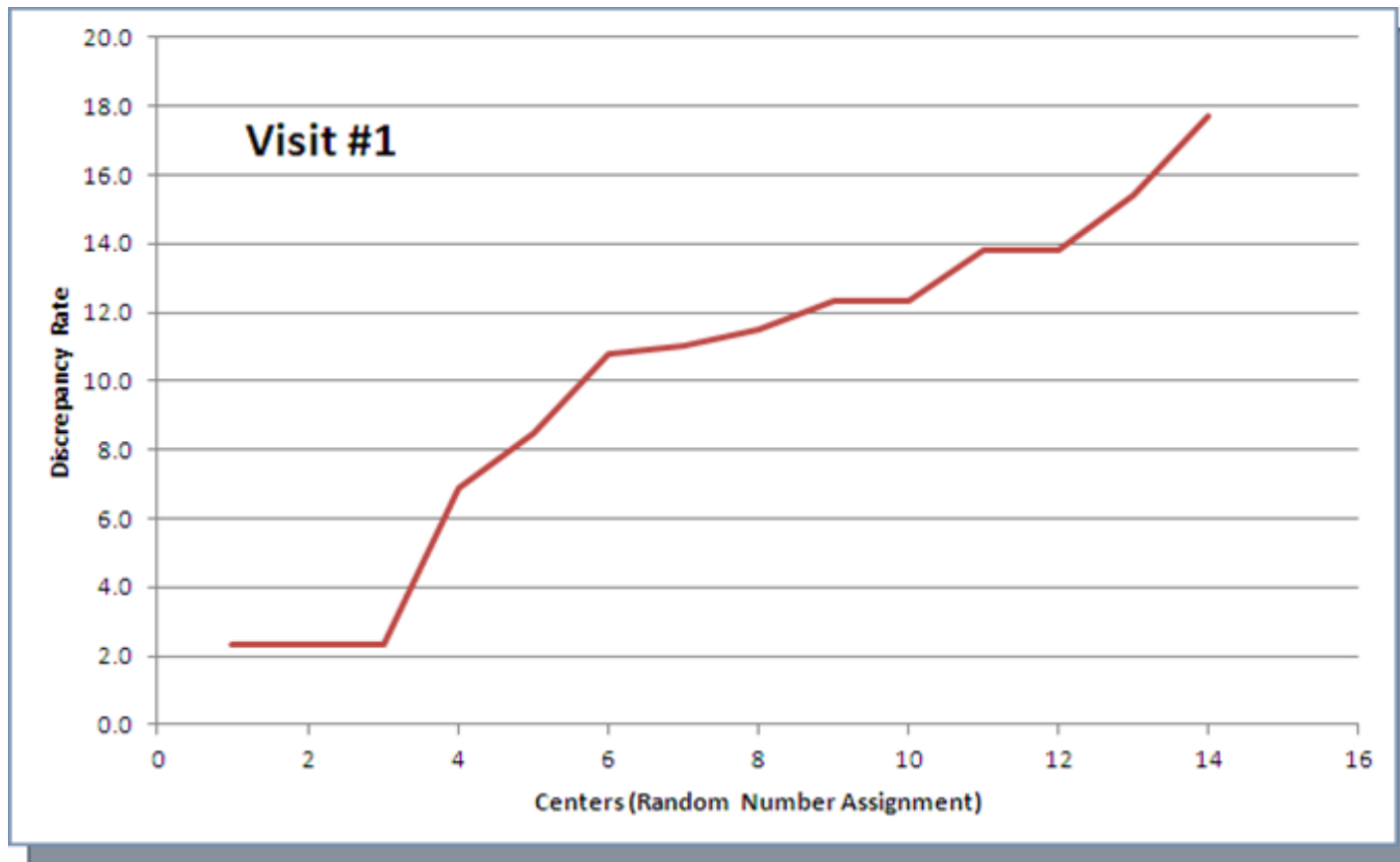
General Validation



Visit #1	Visit #2	Visit #3
8.5%	5.9%	6.2%
2.4%		
4.5%		
5.3%		
14.4%	6.2%	
6.1%	5.7%	5.1%
11.4%	3.2%	
6.6%		
4.7%		
6.5%	3.8%	
5.8%	4.3%	
7.9%		
6.0%	3.2%	
7.9%	4%	4.1%

Validation Results

Focus Variables



Validation Results

Focus Variables



Visit #1	Visit #2
8.5%	20.5%
6.9%	
17.7%	11.7%
13.8%	
12.3%	
12.3%	8.5%
10.8%	10.1%
11.0%	
2.3%	
2.3%	7.0%
11.5%	
2.3%	
13.8%	5.7%
15.4%	10.0%



Validation Format Update

- Registrar Validator**

Shauna Di Pasquo

- Variables**

Auto-adjustment for date of admit definitions

High impact variable validation

- Duration**

1 day

Validation Goals

1

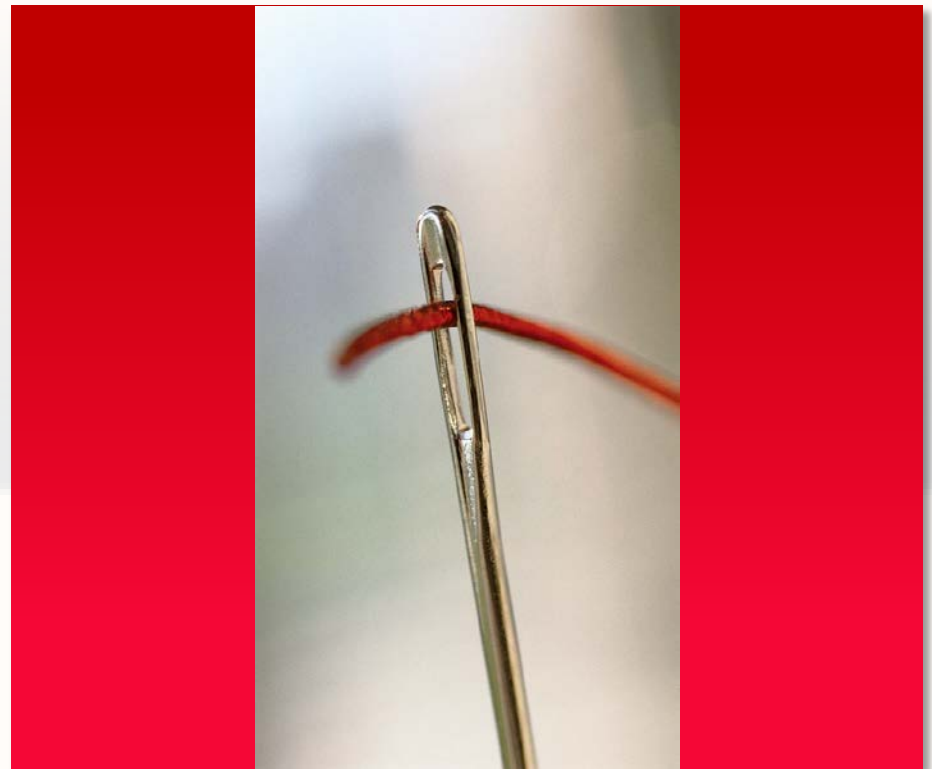
Consistency

2

Reflect data quality
within reports

3

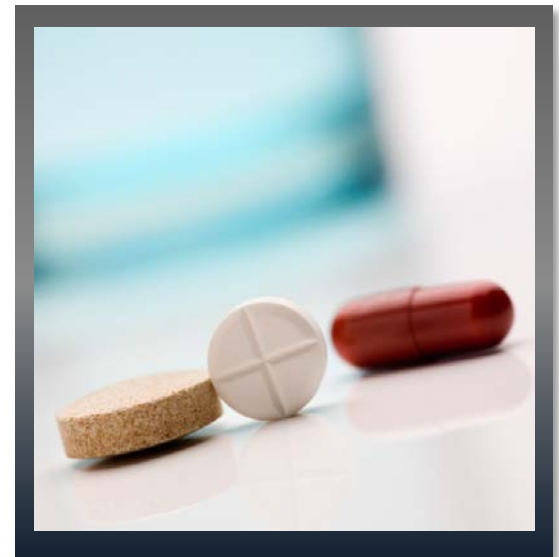
Continuous
improvement



M·TQIP

Agenda

- ✓ 1 Validation Updates
- 2 Key Definition Review
- 3 Case Scenarios
- 4 Protective Measures
- 5 New Updates



Hemorrhage Control Process Measures

Lowest ED Systolic Blood Pressure

- Lowest sustained (>5 min) systolic blood pressure measured within the first hour of **ED/hospital arrival**.
- Refers to lowest sustained (>5 min) SBP in the **ED/hospital of the index hospital**, where index hospital is the hospital abstracting the data.

Hemorrhage Control Process Measures

Collection Criteria

TQIP

1

Collect on all patients with transfusion blood within first 4 hours after ED/hospital Arrival.



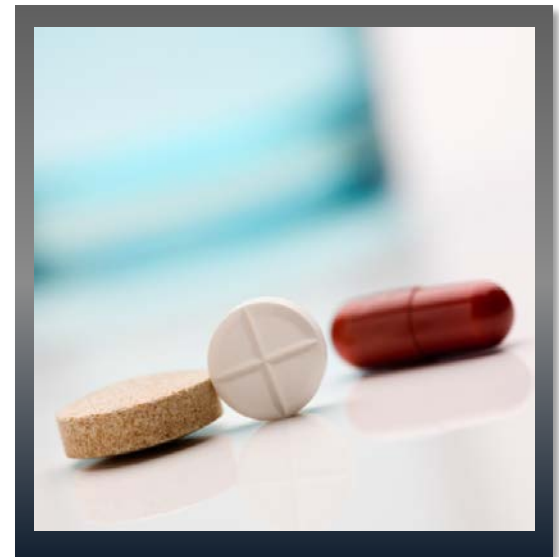
MTQIP

2

Collect on **all patients** with transfusion blood within first 4 hours after ED/hospital arrival.

Agenda

- ✓ 1 Validation Updates
- ✓ 2 Key Definition Review
- 3 Case Scenarios
- 4 Protective Measures
- 5 New Updates



Case Scenarios

59-year-old woman s/p MVC



Question 1

**Based on the information listed above
what comorbidities are present?**

1. _____
2. _____
3. _____
4. _____

Case Scenarios

59-year-old woman s/p MVC



Question 1

Based on the information listed above what comorbidities are present?

- 1. Bleeding Disorder**
- 2. Direct Thrombin Inhibitor**
- 3. Current Smoker**
- 4. Congenital Anomalies**

Horseshoe Kidney

1

Congenital Disorder

2

Most common renal fusion anomaly

3

Isthmus is fused part



Case Scenarios

35-year-old man s/p MVC



Question 2

Does this patient meet the criteria for pneumonia?

Yes / No

Why or why not?

Case Scenarios

35-year-old man s/p MVC



Question 2

Yes

Criterion 2: **Chest radiographic examination shows new or progressive infiltrate, consolidation, cavitation, or pleural effusion** AND any of the following:

- a. New onset of purulent sputum or change in character of sputum
- b. Organism isolated from blood culture
- c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy**
- d. Isolation of virus or detection of viral antigen in respiratory secretions
- e. Diagnostic single antibody titer (IgM) or fourfold increase in paired serum samples (IgG) for pathogen
- f. Histopathologic evidence of pneumonia

Case Scenarios

83-year-old man s/p fall



Question 3

Does this patient meet the criteria for DVT?

Yes / No

Why or why not?

Case Scenarios

83-year-old man s/p fall



Question 3

No

The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by venogram, ultrasound, or CT scan. The **patient should be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava**. Also include as a positive result, patients with deep vein thrombosis where the attending physician documents therapeutic anticoagulation contraindication due to bleeding risk. Do not include as a positive result, thrombosis of superficial veins of the upper or lower extremities, such as the cephalic or greater saphenous vein.

Case Scenarios

84-year-old female s/p fall



Question 4

Does this patient meet the criteria for DVT?

Yes / No

Why or why not?

Case Scenarios

84-year-old female s/p fall



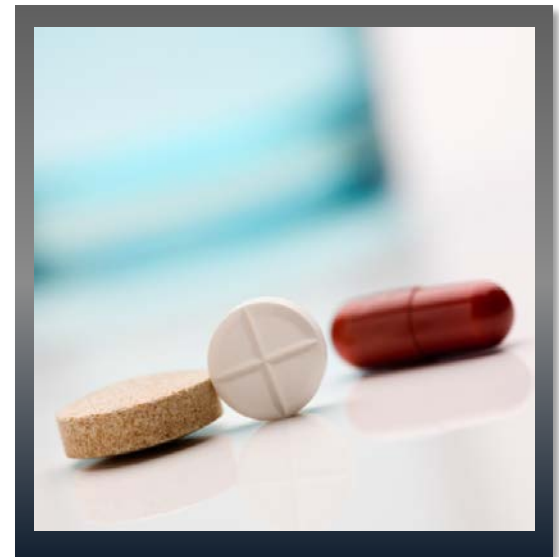
Question 4

No

The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by venogram, ultrasound, or CT scan. The **patient should be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava**. Also include as a positive result, patients with deep vein thrombosis where the attending **physician documents therapeutic anticoagulation contraindication due to bleeding risk**. Do not include as a positive result, thrombosis of superficial veins of the upper or lower extremities, such as the cephalic or greater saphenous vein.

Agenda

- ✓ 1 Validation Updates
- ✓ 2 Key Definition Review
- ✓ 3 Case Scenarios
- 4 Protective Measures
- 5 New Updates



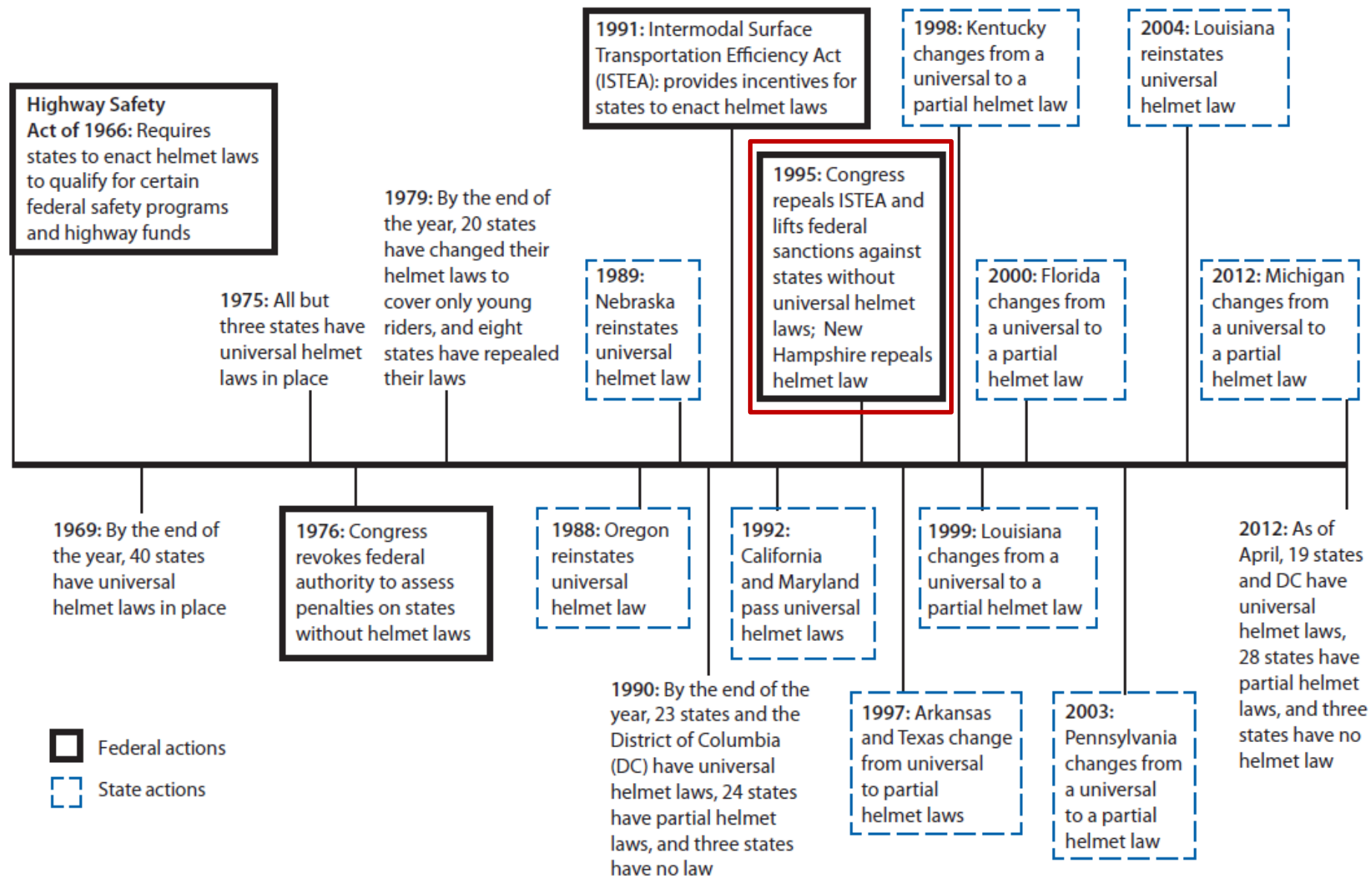
Protective Measures

Literature Review



- Motorcycle mortality rates have been increasing since the 1990s
 - 2009 was the first year since 1995 that motorcycle fatalities did not increase
- Research consistently demonstrates that motorcycle helmets reduce the likelihood and the severity of head injuries, the primary cause of death

French MT, Gumus G, Homer JF. Motorcycle fatalities among out-of-state riders and the role of universal helmet. *Social Science & Medicine*. 2012; 75: 1855-1863.





<http://www.iihs.org/laws/mapmotorcyclehelmets.aspx>

Protective Measures

Impact of helmet laws

1

86% of motorcyclists wear helmets in states with UHLs

2

55% of motorcyclists wear helmets in states without UHLs

3

Helmets decrease the risk of a motorcycle fatality by 22 – 34%.

Sass TR, Zimmerman PR. *Journal of Regulatory Economics*. 2000; 18(3): 195-215.
Houston DJ, Richardson LE. *Accident Analysis and Prevention*. 2008; 40(1): 200-208.

Protective Measures

Why does all of this matter?

1

Morbidity and Mortality for the individual

2

High cost of medical care and loss of future productivity is borne in large part by society

3

Negative externalities created by cross-state policy differences – impact of motorcyclist migration and injury

Bledsoe GH, et al. *Journal of Trauma-Injury Infection and Critical Care*. 2002; 53(6): 1078-1087.

Coben JH, et al. *Accident Analysis & Prevention*. 2007; 39(1): 190-196

Hall MK. Tenn. Hospitals Paying For Ark. Helmet Laws (2006) <http://www.thv11.com/news/article/32486/0/Tenn-Hospitals-Paying-For-Ark-Helmet-Laws-Others>

Protective Measures

Primary literature source purpose



- Investigate the differential effectiveness of UHL policies on in-state and out-of-state motorcycle riders by looking at fatalities – possible spillover effects
 - 21 years (1988 – 2008)
 - Fatality Analysis Reporting System (FARS)
 - Explanatory variables: UHL, BAC, ALR, speed limits

French MT, Gumus G, Homer JF. Motorcycle fatalities among out-of-state riders and the role of universal helmet. *Social Science & Medicine*. 2012; 75: 1855-1863.

Protective Measures

Primary literature source findings



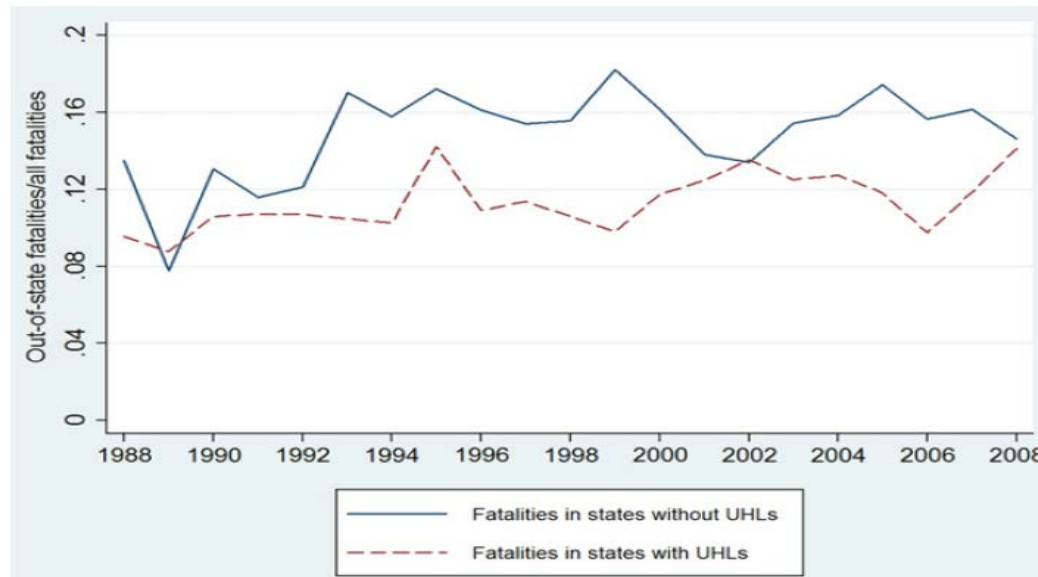
	Entire sample (N = 1008)		No UHL (N = 548)		UHL (N = 460)	
	Mean	SD	Mean	SD	Mean	SD
Motorcycle fatalities						
All fatalities	64.328	78.649	61.215	84.974	68.037	70.288
All fatalities per 10,000 motorcycle registrations**	6.722	3.273	6.331	3.304	7.187	3.176
In-state	58.173	74.479	55.234	80.760	61.674	66.141
In-state per 10,000 motorcycle registrations***	5.841	2.940	5.429	3.014	6.332	2.772
Out-of-state	6.156	5.612	5.982	5.678	6.363	5.531
Out-of-state per 10,000 motorcycle registrations	0.881	0.848	0.902	0.803	0.855	0.900
Out-of-state/all fatalities***	0.132	0.108	0.148	0.123	0.113	0.083
Out-of-state fatality counts of operators						
From states with UHLs***	3.040	3.396	2.668	3.341	3.483	3.411
From states without UHLs***	2.728	2.975	2.958	3.149	2.454	2.731
Without helmets from states with UHLs***	1.090	1.783	1.540	2.143	0.554	0.988
Without helmets from states without UHLs***	1.250	1.824	1.927	2.138	0.443	0.805
Policies & controls						
MC registrations (1000s)	100.525	109.346	98.128	106.922	103.381	112.217
MC registrations per 10,000 people***	213.067	124.270	266.944	134.616	148.882	68.487
BAC ≤ .08 ^b	0.432	0.486	0.445	0.487	0.418	0.486
BAC per se ^{c*}	0.949	0.219	0.962	0.192	0.935	0.247
Administrative license revocation ^{d***}	0.725	0.447	0.792	0.406	0.646	0.479
Maximum speed limits ≥ 65 mph	0.933	0.246	0.941	0.233	0.924	0.261
Proportion of neighbors with UHL***	0.494	0.294	0.392	0.283	0.614	0.260
Real income per capita (\$10,000)*	3.353	0.584	3.321	0.558	3.391	0.612
Average temperature***	55.205	7.738	53.302	7.576	57.472	7.314
Average precipitation***	35.821	15.887	31.239	15.307	41.278	14.818

Out-of-state rider fatalities make up about 13% of all motorcycle fatalities.

On average, a slightly larger number of out-of-state fatalities involve operators from UHL states than from states without a UHL (3.0 versus 2.7).

Protective Measures

Primary literature source findings



States with a UHL display a significantly lower ratio ($p < .01$) of out-of-state fatalities to total fatalities compared to states without a UHL (11% versus 15%).

Two possible reasons: “(i) states without UHLs may attract more out-of-state riders than UHL states; (ii) out-of-state riders (like in-state riders) are more likely to be involved in fatal crashes in states without UHLs since the proportion of riders using helmets is lower.”

Protective Measures

Primary literature source findings



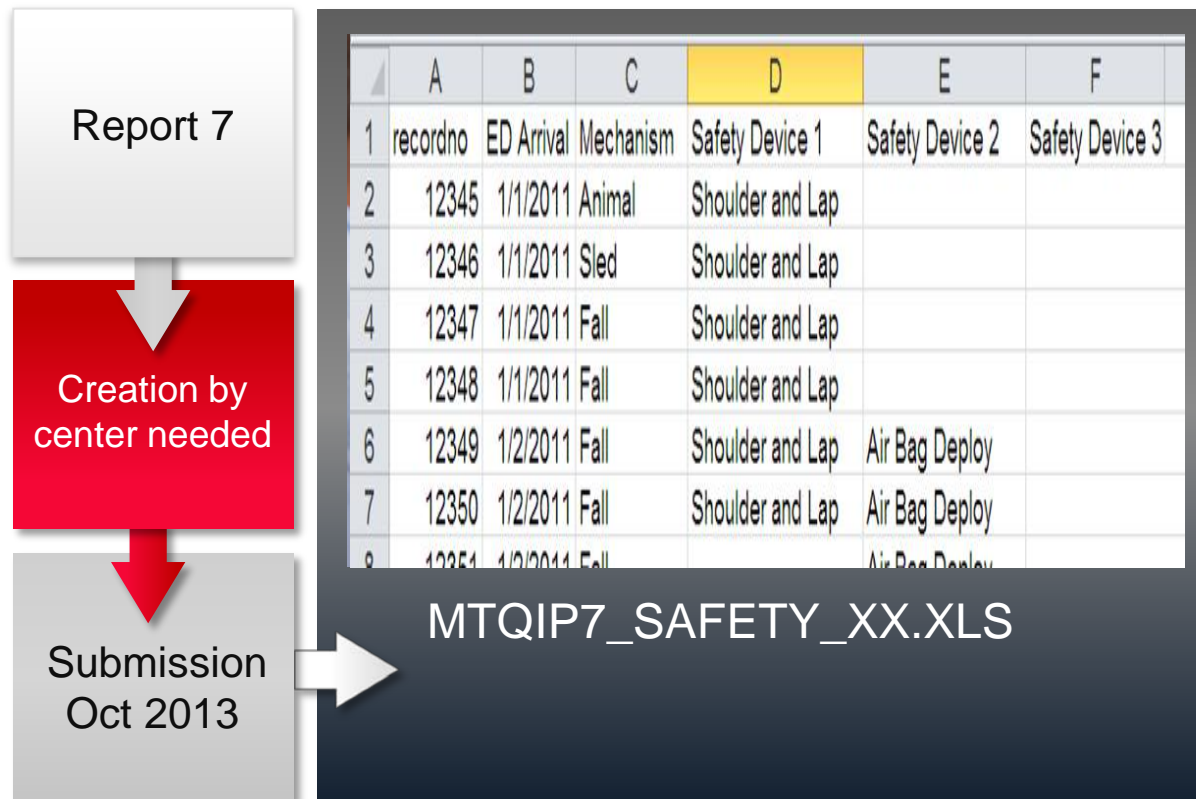
Policies & controls for the crash state	All fatalities			In-state	Out-of-state
	(1)	(2)	(3)	(4)	(5)
No UHL	1.029 (0.023)	1.337*** (0.034)	1.301** (0.041)	1.302*** (0.042)	1.180* (0.107)
BAC \leq 0.08	0.954 (0.030)	0.974 (0.023)	0.966 (0.021)	0.977 (0.022)	0.888** (0.053)
BAC per se	0.911* (0.043)	1.083** (0.043)	0.882** (0.050)	0.871** (0.053)	0.993 (0.149)
Administrative license revocation	0.885*** (0.023)	0.955* (0.026)	0.943* (0.031)	0.948 (0.032)	0.878 (0.082)
Maximum speed limits \geq 65 mph	0.929 (0.045)	0.953 (0.033)	1.103* (0.064)	1.180*** (0.072)	0.591*** (0.098)
Ln(motorcycle registrations)	2.378*** (0.031)	1.355*** (0.051)	1.146*** (0.049)	1.149*** (0.052)	1.204* (0.132)
Proportion of neighbors with UHL	1.047 (0.052)	0.855** (0.056)	0.967 (0.080)	0.919 (0.080)	1.474 (0.389)
Real income per capita (\$1000)	1.068** (0.029)	1.065 (0.057)	1.225*** (0.083)	1.227*** (0.088)	1.237 (0.226)
Ln (average temperature)	11.813*** (1.260)	2.835*** (0.924)	2.308*** (0.717)	2.308*** (0.749)	2.585 (2.209)
Ln (average precipitation)	0.942*** (0.020)	0.878*** (0.025)	0.907*** (0.024)	0.892*** (0.024)	1.005 (0.071)
Number of observations	1008	1008	1008	1008	1008
Number of states	48	48	48	48	48
Log-likelihood	-4035.04	-3304.18	-3158.80	-3079.80	-1985.75
Year fixed-effects	Yes	Yes	Yes	Yes	Yes
State fixed-effects	No	Yes	Yes	Yes	Yes
State-specific time trend	No	No	Yes	Yes	Yes

The estimation results for motorcycle fatality counts: These data are incidence rate ratios (IRRs) for each explanatory variable in the equation.

- 30% increase in fatalities associated with not having UHL.
- 18% increase in out-of-state fatalities associated with no UHL.
- Repealing a UHL leads to 75.7 additional in-state fatalities and 7.3 additional out-of state fatalities per year, on ave.

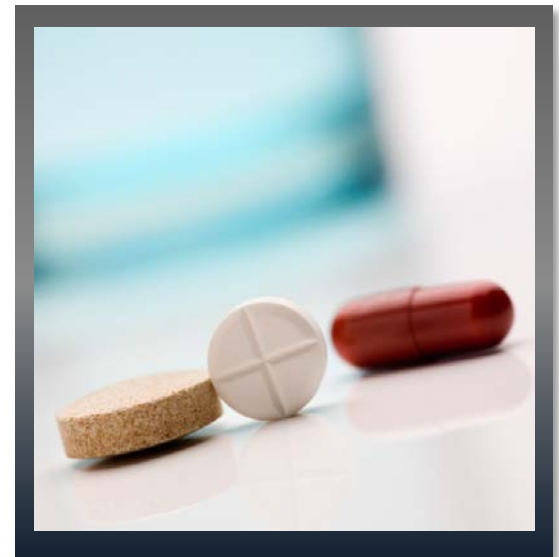
Protective Measures

Safety Devices Report



Agenda

- ✓ 1 Validation Updates
- ✓ 2 Key Definition Review
- ✓ 3 Case Scenarios
- ✓ 4 Protective Measures
- 5 New Updates



Anticipated Updates

2014



- Abuse fields
- Revisions to Hospital Discharge Disposition
- Trauma Triage Criteria (CDC)

Anticipated Updates

2014



- Abuse fields
 - Was a report of suspected abuse made to civil authorities?
 - Was there a police investigation initiated because of the episode?
 - Was the child discharged to a different caregiver from the caregiver at admission?

Anticipated Updates

2014



- CDC Field Trauma Triage Criteria
 - Physiologic and anatomic EMS trauma triage criteria for transport to a trauma center as defined by the Centers for Disease Control and Prevention and the American College of Surgeons-Committee on Trauma. This information must be found on the EMS run sheet.

Anticipated Updates

CDC Field Trauma Triage Criteria

- 1 Glasgow Coma Score < 14
- 2 Systolic blood pressure < 90mmHg
- 3 Respiratory rate <10 or >29 breaths per min or need for ventilatory support
- 4 All penetrating injuries to head, neck torso, and extremities proximal to elbow or knee
- 5 Chest wall instability
- 6 Two or more proximal long-bone fractures
- 7 Crushed, degloved, managled, or pulseless extremity

Anticipated Updates

CDC Field Trauma Triage Criteria

8 Amputation proximal to wrist or ankle

9 Pelvic fracture

10 Open or depressed skull fracture

11 Paralysis

Anticipated Updates

CDC Field Trauma Triage Criteria (*Vehicle, Ped, Other Risk Injury*)

- 1 Falls: > 20 ft. (one story is equal to 10 ft.)
- 2 Crash intrusion, including roof: > 12 in. occupant site; > 18 in. any site
- 3 **Crash ejection (partial or complete) from vehicle**
- 4 Crash death in same passenger compartment
- 5 Crash vehicle telemetry data (AACN) consistent with high risk injury
- 6 Auto vs. ped/bicyclist thrown, run over, or > 20 MPH impact
- 7 Motorcycle crash > 20 MPH

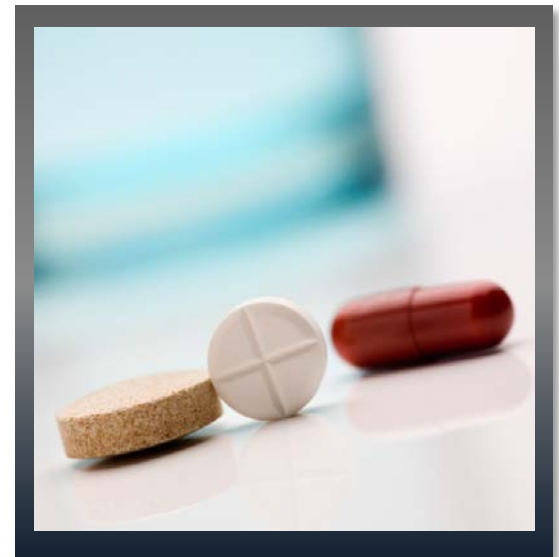
Anticipated Updates

CDC Field Trauma Triage Criteria (*Vehicle, Ped, Other Risk Injury*)

- 1 Falls: > 20 ft. (one story is equal to 10 ft.)
- 2 Crash intrusion, including roof: > 12 in. occupant site; > 18 in. any site
- 3 **Crash ejection (partial or complete) from vehicle**
- 4 Crash death in same passenger compartment
- 5 Crash vehicle telemetry data (AACN) consistent with high risk injury
- 6 Auto vs. ped/bicyclist thrown, run over, or > 20 MPH impact
- 7 Motorcycle crash > 20 MPH

Agenda

- ✓ 1 Validation Updates
- ✓ 2 Key Definition Review
- ✓ 3 Case Scenarios
- ✓ 4 Protective Measures
- ✓ 5 New Updates



Closing Comments



Special thank you
Jeri Dihle
Cece Roiter
Dr. Eve Losman
Dr. Jeffrey Wesolowski
Dania Hannan

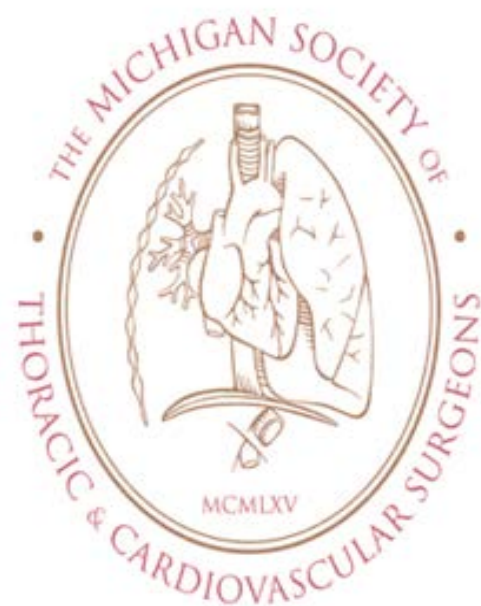
Data due reminder: June 7, 2013

MSTCVS CQI:

Michigan Society of Thoracic & CardioVascular Surgeons



Michigan Data Group – Traverse City: August 2012



BCBSM CQI - 2006

Outline Overview

- Who am I ?
- What is MSTCVS ?
- What do We Do ?
- Why am I Here ?
 - Judy's Visit to MSTCVS Meeting
- MSTCVS Data Audit Process

MSTCVS Coordinating Center

- Jaelene Williams, RN, MS
 - Nurse Practitioner CV/Thoracic Surgery
 - STS Data Manager 25+ years
 - St. Joseph Mercy Hospital, Ann Arbor
- MSTCVS Data Manager Coordinator - 2000
- September, 2012
 - MSTCVS Coordinating Center
 - Data Manager Education/Audit Coordinator

Organization Goals Are Alike

M•TQIP

MICHIGAN TRAUMA QUALITY IMPROVEMENT PROGRAM

HOME

About M•TQIP

Calendar

Contact Us

Meetings

Membership

Publications

Registry

New Reports

Legacy Reports

Resources

Members Only

Measuring trauma center outcomes with:

- data standardization
- complete and accurate data collection
- data validation
- risk-adjusted benchmarking

and correlation with processes of care.

That's M•TQIP



Michigan Trauma Quality Improvement Program

Program Overview

Similar CQI Groups

MTQIP

- 25 Michigan Trauma Centers
- 1-2 Registrars per Site
- Data Documentation Challenging
- Examine Data Variances
- Improve Patient Outcomes

MSTCVS

- 33 Michigan Hospital Cardiac Surgery Sites
- 1-3 Data Managers per Site
 - Some 2-3 Registries
- Data Documentation Challenging
- Examine Data Variances
- Improve Patient Outcomes

Michigan Cardiac Surgery Data Managers

Michigan State Medical Society

**Michigan Society of
Thoracic (1969)
& Cardiovascular Surgeons**

Other Physician
Specialty
Organizations

Michigan STS QI Committee

Michigan Cardiac Surgery Data Manager Group

STS





The Society of Thoracic Surgeons



- STS = Society of Thoracic Surgeons
- National Thoracic (Chest) Surgeon's Professional Society
 - 50th Year (1963 -2013)
- Surgeon Members: Perform Cardiac, Lung & Esophageal Operations
- Associate Members – RN's, Data Managers, PA's, Perfusionists (CPB Machine) in Thoracic Areas



**The Society
of Thoracic
Surgeons**



- STS National Database/Registry since 1989
 - Voluntary Contribution of Data Outcomes
 - >5 Million Patients 2013
- STS Guidelines govern Data Submission
- Certified STS Software Vendors
- Public Reporting Data Outcomes ~ 3 years
 - STS Website & Consumer Reports Magazine
 - Voluntary Submission of Outcomes
 - By Hospital, By Physician Practice



**The Society
of Thoracic
Surgeons**



- 3 National STS Databases
 - Adult Cardiac Surgery – Oldest & Largest
 - ~1060 Participant Sites
 - General Thoracic Surgery
 - ~225 Participant Sites
 - Congenital Cardiac Surgery
 - 110 Participant Sites
- Hospitals or Physician Practices =Site
- ~ 95% of all places performing Thoracic Surgery

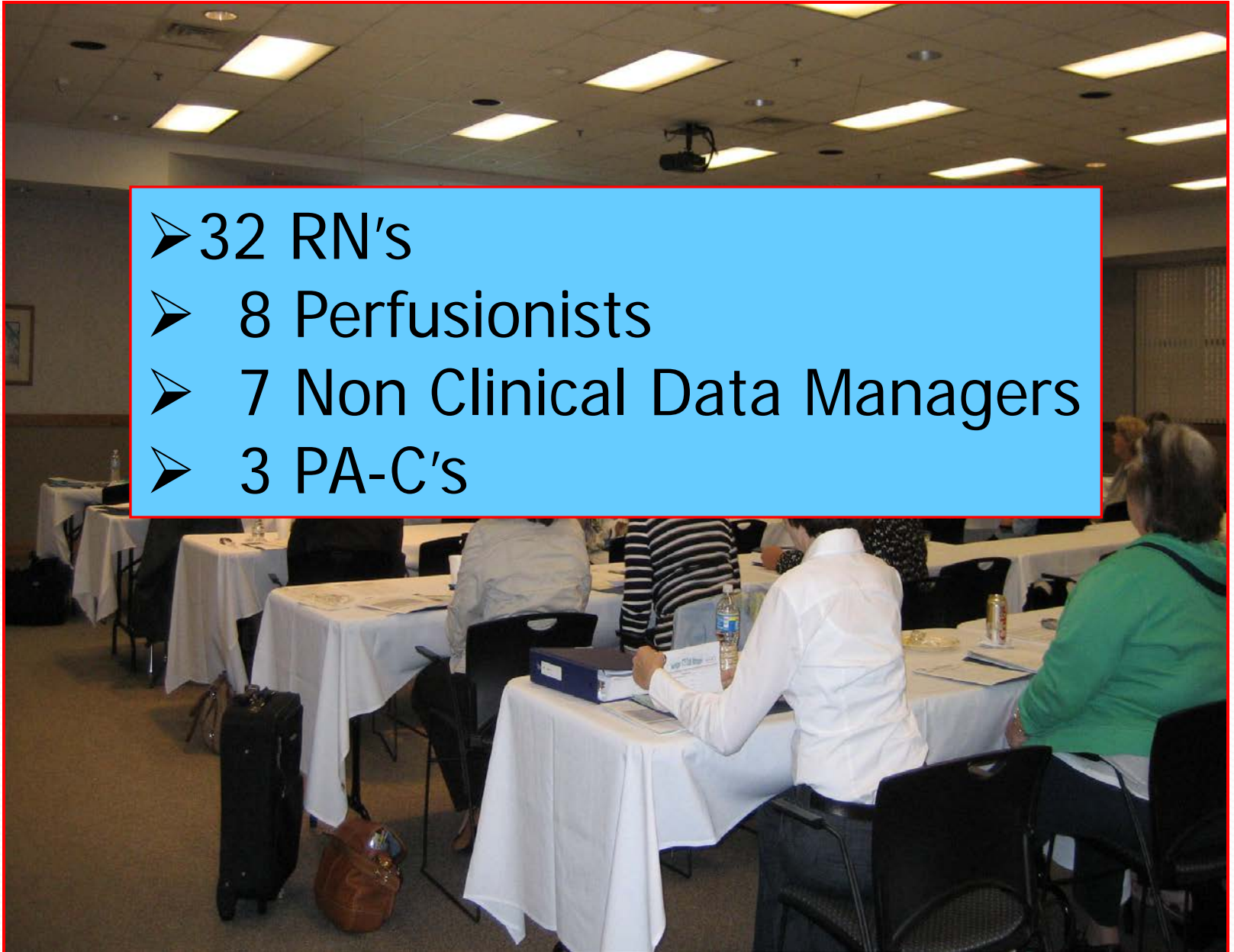
Data Abstraction Takes:



Like You !

Michigan Cardiac Surgery Data Managers - ~ 50 Active Members

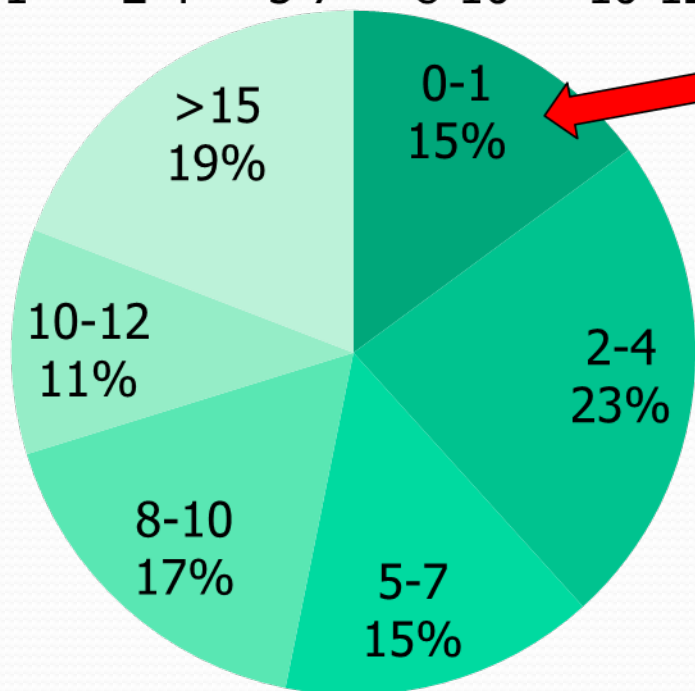
- 32 RN's
- 8 Perfusionists
- 7 Non Clinical Data Managers
- 3 PA-C's



Michigan STS Data Managers

DM Experience in Years

■ 0-1 ■ 2-4 ■ 5-7 ■ 8-10 ■ 10-12 ■ >15



Data Managers

0-1 Yrs = 7

2-4 Yrs = 11

5-7 Yrs = 7

8-10 Yrs = 8

10-12 Yrs = 6

➤ 15 Yrs = 9

~ 70 on Email Roster

1997 STS
Data Collection
Form 5 pages



THE SOCIETY OF THORACIC SURGEONS
NATIONAL CARDIAC SURGERY DATABASE

DATA COLLECTION FORM

Demographics

Patient Name (Last, First, M.): _____
 Member Number: (5 Digit Number)
 Address: _____
 City: _____ State: _____ Zip: _____
 Telephone: (____) _____ - _____ Social Security Number: _____ - _____ - _____
 Hospital: _____
 Insurer: ☐ Medicare ☐ Medicaid ☐ Private/Corporate ☐ CHAMPUS ☐ Uninsured
 Patient Transferred Directly From Another Hospital/Facility: ☐ Yes ☐ No
 Other Hospital Performs Cardiac Surgery: ☐ Yes ☐ No
 Dates: Admission: ____ - ____ - ____ Surgery: ____ - ____ - ____
 Discharge: ____ - ____ - ____ Same Day Elective Admission: ☐ Yes ☐ No
 Date of Birth: ____ - ____ - ____ Age: _____ Sex: ☐ Male ☐ Female
 Race: ☐ Caucasian ☐ Black ☐ Hispanic ☐ Asian ☐ Native American ☐ Other
 Referring Cardiologist: _____ City: _____ Telephone: (____) ____ - ____
 Referring Physician: _____ City: _____ Telephone: (____) ____ - ____
 Surgeon: _____ Assistant Surgeon: _____ Resident: _____
 Responsible for Procedure: ☐ Surgeon ☐ Assistant Surgeon ☐ Resident

Patient History

Weight: _____ kg Height: _____ cm
Risk Factors: ☐ Yes ☐ No
☐ Smoking History: ☐ Current Pk/Yrs: _____
☐ Family History of CAD
☐ Diabetes: Control: ☐ None ☐ Oral ☐ Diet ☐ Insulin
☐ Morbid Obesity
☐ Hypercholesterolemia
 Serum Cholesterol Level, Highest: _____
☐ Renal Failure: Highest Serum Creatinine Level: _____
☐ Dialysis
☐ Hypertension
☐ Pulmonary Hypertension
☐ Cerebrovascular Accident
☐ Recent (< 2 wks) ☐ Remote (> 2 wks)
☐ Infectious Endocarditis: ☐ Active ☐ Treated
☐ Cardiomegaly
☐ COPD
☐ Immunosuppressive Rx
☐ Peripheral Vascular Disease
☐ Cerebrovascular Disease

Previous CV Intervention: ☐ Yes ☐ No

Most Recent: ____ - ____ - ____
 Number of Prior Cardiac Operations Requiring
 Cardiopulmonary Bypass: _____
☐ CAB
☐ Valve: (Check all that apply)
☐ Replace: ☐ A ☐ M ☐ T ☐ P
☐ Repair: ☐ A ☐ M ☐ T ☐ P
☐ Minimally Invasive CABG
☐ Minimally Invasive Valve: (Check All That Apply)
☐ A ☐ M ☐ T ☐ P
☐ Other Cardiac: (Check All That Apply)
☐ LVA ☐ VSD ☐ ASD
☐ Congenital ☐ Cardiac Trauma
☐ Bicuspid ☐ Cardiac TX
☐ Pacemaker ☐ AICD ☐ Other
☐ Other Non-Cardiac: (Check All That Apply)
☐ Aortic Aneurysm: ☐ Asc ☐ Arch ☐ Desc
☐ Thor/Abd ☐ Abd
☐ Carotid Endart
☐ Other Vascular
☐ Other Thoracic
☐ Non-Surgical: (Check All That Apply)
☐ PTCA ☐ Atherectomy/Laser ☐ Stent
☐ Thrombolysis
☐ Balloon Valvuloplasty: (Check All That Apply)
☐ A ☐ M ☐ T ☐ P

Valve Surgery ☐ CAB

Aortic: _____

Mitral: _____

Tricuspid: _____

Pulmonary: _____

Key for Table 1

1 = Bicuspid
 2 = Aortic
 3 = Mitral
 4 = Tricuspid
 5 = Pulmonary
 6 = Aortic
 7 = Mitral
 8 = Tricuspid
 9 = Pulmonary
 10 = Aortic
 11 = Mitral
 12 = Tricuspid
 13 = Pulmonary
 14 = Aortic
 15 = Mitral
 16 = Tricuspid
 17 = Pulmonary
 18 = Aortic
 19 = Mitral
 20 = Tricuspid
 21 = Pulmonary
 22 = Aortic
 23 = Mitral
 24 = Tricuspid
 25 = Pulmonary
 26 = Aortic
 27 = Mitral
 28 = Tricuspid
 29 = Pulmonary
 30 = Aortic
 31 = Mitral
 32 = Tricuspid
 33 = Pulmonary
 34 = Aortic
 35 = Mitral
 36 = Tricuspid
 37 = Pulmonary
 38 = Aortic
 39 = Mitral
 40 = Tricuspid
 41 = Pulmonary
 42 = Aortic
 43 = Mitral
 44 = Tricuspid
 45 = Pulmonary
 46 = Aortic
 47 = Mitral
 48 = Tricuspid
 49 = Pulmonary
 50 = Aortic
 51 = Mitral
 52 = Tricuspid
 53 = Pulmonary
 54 = Aortic
 55 = Mitral
 56 = Tricuspid
 57 = Pulmonary
 58 = Aortic
 59 = Mitral
 60 = Tricuspid
 61 = Pulmonary
 62 = Aortic
 63 = Mitral
 64 = Tricuspid
 65 = Pulmonary
 66 = Aortic
 67 = Mitral
 68 = Tricuspid
 69 = Pulmonary
 70 = Aortic
 71 = Mitral
 72 = Tricuspid
 73 = Pulmonary
 74 = Aortic
 75 = Mitral
 76 = Tricuspid
 77 = Pulmonary
 78 = Aortic
 79 = Mitral
 80 = Tricuspid
 81 = Pulmonary
 82 = Aortic
 83 = Mitral
 84 = Tricuspid
 85 = Pulmonary
 86 = Aortic
 87 = Mitral
 88 = Tricuspid
 89 = Pulmonary
 90 = Aortic
 91 = Mitral
 92 = Tricuspid
 93 = Pulmonary
 94 = Aortic
 95 = Mitral
 96 = Tricuspid
 97 = Pulmonary
 98 = Aortic
 99 = Mitral
 100 = Tricuspid
 101 = Pulmonary
 102 = Aortic
 103 = Mitral
 104 = Tricuspid
 105 = Pulmonary
 106 = Aortic
 107 = Mitral
 108 = Tricuspid
 109 = Pulmonary
 110 = Aortic
 111 = Mitral
 112 = Tricuspid
 113 = Pulmonary
 114 = Aortic
 115 = Mitral
 116 = Tricuspid
 117 = Pulmonary
 118 = Aortic
 119 = Mitral
 120 = Tricuspid
 121 = Pulmonary
 122 = Aortic
 123 = Mitral
 124 = Tricuspid
 125 = Pulmonary
 126 = Aortic
 127 = Mitral
 128 = Tricuspid
 129 = Pulmonary
 130 = Aortic
 131 = Mitral
 132 = Tricuspid
 133 = Pulmonary
 134 = Aortic
 135 = Mitral
 136 = Tricuspid
 137 = Pulmonary
 138 = Aortic
 139 = Mitral
 140 = Tricuspid
 141 = Pulmonary
 142 = Aortic
 143 = Mitral
 144 = Tricuspid
 145 = Pulmonary
 146 = Aortic
 147 = Mitral
 148 = Tricuspid
 149 = Pulmonary
 150 = Aortic
 151 = Mitral
 152 = Tricuspid
 153 = Pulmonary
 154 = Aortic
 155 = Mitral
 156 = Tricuspid
 157 = Pulmonary
 158 = Aortic
 159 = Mitral
 160 = Tricuspid
 161 = Pulmonary
 162 = Aortic
 163 = Mitral
 164 = Tricuspid
 165 = Pulmonary
 166 = Aortic
 167 = Mitral
 168 = Tricuspid
 169 = Pulmonary
 170 = Aortic
 171 = Mitral
 172 = Tricuspid
 173 = Pulmonary
 174 = Aortic
 175 = Mitral
 176 = Tricuspid
 177 = Pulmonary
 178 = Aortic
 179 = Mitral
 180 = Tricuspid
 181 = Pulmonary
 182 = Aortic
 183 = Mitral
 184 = Tricuspid
 185 = Pulmonary
 186 = Aortic
 187 = Mitral
 188 = Tricuspid
 189 = Pulmonary
 190 = Aortic
 191 = Mitral
 192 = Tricuspid
 193 = Pulmonary
 194 = Aortic
 195 = Mitral
 196 = Tricuspid
 197 = Pulmonary
 198 = Aortic
 199 = Mitral
 200 = Tricuspid
 201 = Pulmonary
 202 = Aortic
 203 = Mitral
 204 = Tricuspid
 205 = Pulmonary
 206 = Aortic
 207 = Mitral
 208 = Tricuspid
 209 = Pulmonary
 210 = Aortic
 211 = Mitral
 212 = Tricuspid
 213 = Pulmonary
 214 = Aortic
 215 = Mitral
 216 = Tricuspid
 217 = Pulmonary
 218 = Aortic
 219 = Mitral
 220 = Tricuspid
 221 = Pulmonary
 222 = Aortic
 223 = Mitral
 224 = Tricuspid
 225 = Pulmonary
 226 = Aortic
 227 = Mitral
 228 = Tricuspid
 229 = Pulmonary
 230 = Aortic
 231 = Mitral
 232 = Tricuspid
 233 = Pulmonary
 234 = Aortic
 235 = Mitral
 236 = Tricuspid
 237 = Pulmonary
 238 = Aortic
 239 = Mitral
 240 = Tricuspid
 241 = Pulmonary
 242 = Aortic
 243 = Mitral
 244 = Tricuspid
 245 = Pulmonary
 246 = Aortic
 247 = Mitral
 248 = Tricuspid
 249 = Pulmonary
 250 = Aortic
 251 = Mitral
 252 = Tricuspid
 253 = Pulmonary
 254 = Aortic
 255 = Mitral
 256 = Tricuspid
 257 = Pulmonary
 258 = Aortic
 259 = Mitral
 260 = Tricuspid
 261 = Pulmonary
 262 = Aortic
 263 = Mitral
 264 = Tricuspid
 265 = Pulmonary
 266 = Aortic
 267 = Mitral
 268 = Tricuspid
 269 = Pulmonary
 270 = Aortic
 271 = Mitral
 272 = Tricuspid
 273 = Pulmonary
 274 = Aortic
 275 = Mitral
 276 = Tricuspid
 277 = Pulmonary
 278 = Aortic
 279 = Mitral
 280 = Tricuspid
 281 = Pulmonary
 282 = Aortic
 283 = Mitral
 284 = Tricuspid
 285 = Pulmonary
 286 = Aortic
 287 = Mitral
 288 = Tricuspid
 289 = Pulmonary
 290 = Aortic
 291 = Mitral
 292 = Tricuspid
 293 = Pulmonary
 294 = Aortic
 295 = Mitral
 296 = Tricuspid
 297 = Pulmonary
 298 = Aortic
 299 = Mitral
 300 = Tricuspid
 301 = Pulmonary
 302 = Aortic
 303 = Mitral
 304 = Tricuspid
 305 = Pulmonary
 306 = Aortic
 307 = Mitral
 308 = Tricuspid
 309 = Pulmonary
 310 = Aortic
 311 = Mitral
 312 = Tricuspid
 313 = Pulmonary
 314 = Aortic
 315 = Mitral
 316 = Tricuspid
 317 = Pulmonary
 318 = Aortic
 319 = Mitral
 320 = Tricuspid
 321 = Pulmonary
 322 = Aortic
 323 = Mitral
 324 = Tricuspid
 325 = Pulmonary
 326 = Aortic
 327 = Mitral
 328 = Tricuspid
 329 = Pulmonary
 330 = Aortic
 331 = Mitral
 332 = Tricuspid
 333 = Pulmonary
 334 = Aortic
 335 = Mitral
 336 = Tricuspid
 337 = Pulmonary
 338 = Aortic
 339 = Mitral
 340 = Tricuspid
 341 = Pulmonary
 342 = Aortic
 343 = Mitral
 344 = Tricuspid
 345 = Pulmonary
 346 = Aortic
 347 = Mitral
 348 = Tricuspid
 349 = Pulmonary
 350 = Aortic
 351 = Mitral
 352 = Tricuspid
 353 = Pulmonary
 354 = Aortic
 355 = Mitral
 356 = Tricuspid
 357 = Pulmonary
 358 = Aortic
 359 = Mitral
 360 = Tricuspid
 361 = Pulmonary
 362 = Aortic
 363 = Mitral
 364 = Tricuspid
 365 = Pulmonary
 366 = Aortic
 367 = Mitral
 368 = Tricuspid
 369 = Pulmonary
 370 = Aortic
 371 = Mitral
 372 = Tricuspid
 373 = Pulmonary
 374 = Aortic
 375 = Mitral
 376 = Tricuspid
 377 = Pulmonary
 378 = Aortic
 379 = Mitral
 380 = Tricuspid
 381 = Pulmonary
 382 = Aortic
 383 = Mitral
 384 = Tricuspid
 385 = Pulmonary
 386 = Aortic
 387 = Mitral
 388 = Tricuspid
 389 = Pulmonary
 390 = Aortic
 391 = Mitral
 392 = Tricuspid
 393 = Pulmonary
 394 = Aortic
 395 = Mitral
 396 = Tricuspid
 397 = Pulmonary
 398 = Aortic
 399 = Mitral
 400 = Tricuspid
 401 = Pulmonary
 402 = Aortic
 403 = Mitral
 404 = Tricuspid
 405 = Pulmonary
 406 = Aortic
 407 = Mitral
 408 = Tricuspid
 409 = Pulmonary
 410 = Aortic
 411 = Mitral
 412 = Tricuspid
 413 = Pulmonary
 414 = Aortic
 415 = Mitral
 416 = Tricuspid
 417 = Pulmonary
 418 = Aortic
 419 = Mitral
 420 = Tricuspid
 421 = Pulmonary
 422 = Aortic
 423 = Mitral
 424 = Tricuspid
 425 = Pulmonary
 426 = Aortic
 427 = Mitral
 428 = Tricuspid
 429 = Pulmonary
 430 = Aortic
 431 = Mitral
 432 = Tricuspid
 433 = Pulmonary
 434 = Aortic
 435 = Mitral
 436 = Tricuspid
 437 = Pulmonary
 438 = Aortic
 439 = Mitral
 440 = Tricuspid
 441 = Pulmonary
 442 = Aortic
 443 = Mitral
 444 = Tricuspid
 445 = Pulmonary
 446 = Aortic
 447 = Mitral
 448 = Tricuspid
 449 = Pulmonary
 450 = Aortic
 451 = Mitral
 452 = Tricuspid
 453 = Pulmonary
 454 = Aortic
 455 = Mitral
 456 = Tricuspid
 457 = Pulmonary
 458 = Aortic
 459 = Mitral
 460 = Tricuspid
 461 = Pulmonary
 462 = Aortic
 463 = Mitral
 464 = Tricuspid
 465 = Pulmonary
 466 = Aortic
 467 = Mitral
 468 = Tricuspid
 469 = Pulmonary
 470 = Aortic
 471 = Mitral
 472 = Tricuspid
 473 = Pulmonary
 474 = Aortic
 475 = Mitral
 476 = Tricuspid
 477 = Pulmonary
 478 = Aortic
 479 = Mitral
 480 = Tricuspid
 481 = Pulmonary
 482 = Aortic
 483 = Mitral
 484 = Tricuspid
 485 = Pulmonary
 486 = Aortic
 487 = Mitral
 488 = Tricuspid
 489 = Pulmonary
 490 = Aortic
 491 = Mitral
 492 = Tricuspid
 493 = Pulmonary
 494 = Aortic
 495 = Mitral
 496 = Tricuspid
 497 = Pulmonary
 498 = Aortic
 499 = Mitral
 500 = Tricuspid
 501 = Pulmonary
 502 = Aortic
 503 = Mitral
 504 = Tricuspid
 505 = Pulmonary
 506 = Aortic
 507 = Mitral
 508 = Tricuspid
 509 = Pulmonary
 510 = Aortic
 511 = Mitral
 512 = Tricuspid
 513 = Pulmonary
 514 = Aortic
 515 = Mitral
 516 = Tricuspid
 517 = Pulmonary
 518 = Aortic
 519 = Mitral
 520 = Tricuspid
 521 = Pulmonary
 522 = Aortic
 523 = Mitral
 524 = Tricuspid
 525 = Pulmonary
 526 = Aortic
 527 = Mitral
 528 = Tricuspid
 529 = Pulmonary
 530 = Aortic
 531 = Mitral
 532 = Tricuspid
 533 = Pulmonary
 534 = Aortic
 535 = Mitral
 536 = Tricuspid
 537 = Pulmonary
 538 = Aortic
 539 = Mitral
 540 = Tricuspid
 541 = Pulmonary
 542 = Aortic
 543 = Mitral
 544 = Tricuspid
 545 = Pulmonary
 546 = Aortic
 547 = Mitral
 548 = Tricuspid
 549 = Pulmonary
 550 = Aortic
 551 = Mitral
 552 = Tricuspid
 553 = Pulmonary
 554 = Aortic
 555 = Mitral
 556 = Tricuspid
 557 = Pulmonary
 558 = Aortic
 559 = Mitral
 560 = Tricuspid
 561 = Pulmonary
 562 = Aortic
 563 = Mitral
 564 = Tricuspid
 565 = Pulmonary
 566 = Aortic
 567 = Mitral
 568 = Tricuspid
 569 = Pulmonary
 570 = Aortic
 571 = Mitral
 572 = Tricuspid
 573 = Pulmonary
 574 = Aortic
 575 = Mitral
 576 = Tricuspid
 577 = Pulmonary
 578 = Aortic
 579 = Mitral
 580 = Tricuspid
 581 = Pulmonary
 582 = Aortic
 583 = Mitral
 584 = Tricuspid
 585 = Pulmonary
 586 = Aortic
 587 = Mitral
 588 = Tricuspid
 589 = Pulmonary
 590 = Aortic
 591 = Mitral
 592 = Tricuspid
 593 = Pulmonary
 594 = Aortic
 595 = Mitral
 596 = Tricuspid
 597 = Pulmonary
 598 = Aortic
 599 = Mitral
 600 = Tricuspid
 601 = Pulmonary
 602 = Aortic
 603 = Mitral
 604 = Tricuspid
 605 = Pulmonary
 606 = Aortic
 607 = Mitral
 608 = Tricuspid
 609 = Pulmonary
 610 = Aortic
 611 = Mitral
 612 = Tricuspid
 613 = Pulmonary
 614 = Aortic
 615 = Mitral
 616 = Tricuspid
 617 = Pulmonary
 618 = Aortic
 619 = Mitral
 620 = Tricuspid
 621 = Pulmonary
 622 = Aortic
 623 = Mitral
 624 = Tricuspid
 625 = Pulmonary
 626 = Aortic
 627 = Mitral
 628 = Tricuspid
 629 = Pulmonary
 630 = Aortic
 631 = Mitral
 632 = Tricuspid
 633 = Pulmonary
 634 = Aortic
 635 = Mitral
 636 = Tricuspid
 637 = Pulmonary
 638 = Aortic
 639 = Mitral
 640 = Tricuspid
 641 = Pulmonary
 642 = Aortic
 643 = Mitral
 644 = Tricuspid
 645 = Pulmonary
 646 = Aortic
 647 = Mitral
 648 = Tricuspid
 649 = Pulmonary
 650 = Aortic
 651 = Mitral
 652 = Tricuspid
 653 = Pulmonary
 654 = Aortic
 655 = Mitral
 656 = Tricuspid
 657 = Pulmonary
 658 = Aortic
 659 = Mitral
 660 = Tricuspid
 661 = Pulmonary
 662 = Aortic
 663 = Mitral
 664 = Tricuspid
 665 = Pulmonary
 666 = Aortic
 667 = Mitral
 668 = Tricuspid
 669 = Pulmonary
 670 = Aortic
 671 = Mitral
 672 = Tricuspid
 673 = Pulmonary
 674 = Aortic
 675 = Mitral
 676 = Tricuspid
 677 = Pulmonary
 678 = Aortic
 679 = Mitral
 680 = Tricuspid
 681 = Pulmonary
 682 = Aortic
 683 = Mitral
 684 = Tricuspid
 685 = Pulmonary
 686 = Aortic
 687 = Mitral
 688 = Tricuspid
 689 = Pulmonary
 690 = Aortic
 691 = Mitral
 692 = Tricuspid
 693 = Pulmonary
 694 = Aortic
 695 = Mitral
 696 = Tricuspid
 697 = Pulmonary
 698 = Aortic
 699 = Mitral
 700 = Tricuspid
 701 = Pulmonary
 702 = Aortic
 703 = Mitral
 704 = Tricuspid
 705 = Pulmonary
 706 = Aortic
 707 = Mitral
 708 = Tricuspid
 709 = Pulmonary
 710 = Aortic
 711 = Mitral
 712 = Tricuspid
 713 = Pulmonary
 714 = Aortic
 715 = Mitral
 716 = Tricuspid
 717 = Pulmonary
 718 = Aortic
 719 = Mitral
 720 = Tricuspid
 721 = Pulmonary
 722 = Aortic
 723 = Mitral
 724 = Tricuspid
 725 = Pulmonary
 726 = Aortic
 727 = Mitral
 728 = Tricuspid
 729 = Pulmonary
 730 = Aortic
 731 = Mitral
 732 = Tricuspid
 733 = Pulmonary
 734 = Aortic
 735 = Mitral
 736 = Tricuspid
 737 = Pulmonary
 738 = Aortic
 739 = Mitral
 740 = Tricuspid
 741 = Pulmonary
 742 = Aortic
 743 = Mitral
 744 = Tricuspid
 745 = Pulmonary
 746 = Aortic
 747 = Mitral
 748 = Tricuspid
 749 = Pulmonary
 750 = Aortic
 751 = Mitral
 752 = Tricuspid
 753 = Pulmonary
 754 = Aortic
 755 = Mitral
 756 = Tricuspid
 757 = Pulmonary
 758 = Aortic
 759 = Mitral
 760 = Tricuspid
 761 = Pulmonary
 762 = Aortic
 763 = Mitral
 764 = Tricuspid
 765 = Pulmonary
 766 = Aortic
 767 = Mitral
 768 = Tricuspid
 769 = Pulmonary
 770 = Aortic
 771 = Mitral
 772 = Tricuspid
 773 = Pulmonary
 774 = Aortic
 775 = Mitral
 776 = Tricuspid
 777 = Pulmonary
 778 = Aortic
 779 = Mitral
 780 = Tricuspid
 781 = Pulmonary
 782 = Aortic
 783 = Mitral
 784 = Tricuspid
 785 = Pulmonary
 786 = Aortic
 787 = Mitral
 788 = Tricuspid
 789 = Pulmonary
 790 = Aortic
 791 = Mitral
 792 = Tricuspid
 793 = Pulmonary
 794 = Aortic
 795 = Mitral
 796 = Tricuspid
 797 = Pulmonary
 798 = Aortic
 799 = Mitral
 800 = Tricuspid
 801 = Pulmonary
 802 = Aortic
 803 = Mitral
 804 = Tricuspid
 805 = Pulmonary
 806 = Aortic
 807 = Mitral
 808 = Tricuspid
 809 = Pulmonary
 810 = Aortic
 811 = Mitral
 812 = Tricuspid
 813 = Pulmonary
 814 = Aortic
 815 = Mitral
 816 = Tricuspid
 817 = Pulmonary
 818 = Aortic
 819 = Mitral
 820 = Tricuspid
 821 = Pulmonary
 822 = Aortic
 823 = Mitral
 824 = Tricuspid
 825 = Pulmonary
 826 = Aortic
 827 = Mitral
 828 = Tricuspid
 829 = Pulmonary
 830 = Aortic
 831 = Mitral
 832 = Tricuspid
 833 = Pulmonary
 834 = Aortic
 835 = Mitral
 836 = Tricuspid
 837 = Pulmonary
 838 = Aortic
 839 = Mitral
 840 = Tricuspid
 841 = Pulmonary
 842 = Aortic
 843 = Mitral
 844 = Tricuspid
 845 = Pulmonary
 846 = Aortic
 847 = Mitral
 848 = Tricuspid
 849 = Pulmonary
 850 = Aortic
 851 = Mitral
 852 = Tricuspid
 853 = Pulmonary
 854 = Aortic
 855 = Mitral
 856 = Tricuspid
 857 = Pulmonary
 858 = Aortic
 859 = Mitral
 860 = Tricuspid
 861 = Pulmonary
 862 = Aortic
 863 = Mitral
 864 = Tricuspid
 865 = Pulmonary
 866 = Aortic
 867 = Mitral
 868 = Tricuspid
 869 = Pulmonary
 870 = Aortic
 871 = Mitral
 872 = Tricuspid
 873 = Pulmonary
 874 = Aortic
 875 = Mitral
 876 = Tricuspid
 877 = Pulmonary
 878 = Aortic
 879 = Mitral
 880 = Tricuspid
 881 = Pulmonary
 882 = Aortic
 883 = Mitral
 884 = Tricuspid
 885 = Pulmonary
 886 = Aortic
 887 = Mitral
 888 = Tricuspid
 889 = Pulmonary
 890 = Aortic
 891 = Mitral
 892 = Tricuspid
 893 = Pulmonary
 894 = Aortic
 895 = Mitral
 896 = Tricuspid
 897 = Pulmonary
 898 = Aortic
 899 = Mitral
 900 = Tricuspid
 901 = Pulmonary
 902 = Aortic
 903 = Mitral
 904 = Tricuspid
 905 = Pulmonary
 906 = Aortic
 907 = Mitral
 908 = Tricuspid
 909 = Pulmonary
 910 = Aortic
 911 = Mitral
 912 = Tricuspid
 913 = Pulmonary
 914 = Aortic
 915 = Mitral
 916 = Tricuspid
 917 = Pulmonary
 918 = Aortic
 919 = Mitral
 920 = Tricuspid
 921 = Pulmonary
 922 = Aortic
 923 = Mitral
 924 = Tricuspid
 925 = Pulmonary
 926 = Aortic
 927 = Mitral
 928 = Tricuspid
 929 = Pulmonary
 930 = Aortic
 931 = Mitral
 932 = Tricuspid
 933 = Pulmonary
 934 = Aortic
 935 = Mitral
 936 = Tricuspid
 937 = Pulmonary
 938 = Aortic
 939 = Mitral
 940 = Tricuspid
 941 = Pulmonary
 942 = Aortic
 943 = Mitral
 944 = Tricuspid
 945

Current DCF 16 Pages



The Society of Thoracic Surgeons

Adult Cardiac Surgery Database

Data Collection Form Version 2.73

January 14, 2011

A. Administrative

Participant ID: Record ID: (software generated) STS Cost Link: Patient ID: (software generated)

B. Demographics

Patient Last Name: Patient First Name: Patient Middle Name:
Date of Birth: (mm/dd/yyyy) Patient Age: Sex: ☐ Male ☐ Female

Social Security Number: Medical Record Number:

Patient's Address:
Street Address: City: ZIP Code: Country:

Is This Patient's Permanent Address: ☐ Yes ☐ No

(If No →) Patient's Permanent Address:
Street Address: City: ZIP Code: Country:

Race (Select all that apply) White: ☐ Yes ☐ No Black/African American: ☐ Yes ☐ No
Asian: ☐ Yes ☐ No Am Indian/Alaskan Nat: ☐ Yes ☐ No
Native Hawaiian/Pacific Islander: ☐ Yes ☐ No Other: ☐ Yes ☐ No

Hispanic, Latino or Spanish Ethnicity: ☐ Yes ☐ No

Referring Cardiologist: Referring Physician:

C. Hospitalization

Hospital Name: (If Not Missing →) Hospital ZIP Code: Hospital State:

Hospital National Provider Identifier:

Payor - (Select all that apply)

Government Health Insurance: ☐ Yes ☐ No (If Yes, select all that apply)

Medicare: ☐ Yes ☐ No (If Yes →)

Health Insurance Claim Number:

Medicaid: ☐ Yes ☐ No

State-Specific Plan: ☐ Yes ☐ No

Correctional Facility: ☐ Yes ☐ No

Medicare Fee For Service: ☐ Yes ☐ No

Military Health Care: ☐ Yes ☐ No

Indian Health Service: ☐ Yes ☐ No

Commercial Health Insurance: ☐ Yes ☐ No

Health Maintenance Organization: ☐ Yes ☐ No

Non-U.S. Insurance: ☐ Yes ☐ No

None / Self: ☐ Yes ☐ No

Arrival Date: (mm/dd/yyyy) Arrival Time: (hh:mm 24-hour clock) Admit Date: (mm/dd/yyyy)

Admit Source: ☐ Elective Admission
☐ Emergency Department
☐ Transfer in from another acute care facility (If Transfer →) Other Hospital Performs Cardiac Surgery ☐ Yes ☐ No
☐ Other

Surgery Date: (mm/dd/yyyy) Discharge Date: (mm/dd/yyyy)

D. Risk Factors

Weight (kg): Height (cm):

Cigarette Smoker: ☐ Yes ☐ No (If Yes →) Current Cigarette Smoker: ☐ Yes ☐ No

Other Tobacco Use: ☐ Yes ☐ No

Family History of Premature Coronary Artery Disease: ☐ Yes ☐ No Last Hematocrit: Last WBC Count:

Platelet Count Prior to Surgery: International Normalized Ratio prior to Surgery:

HIT Antibodies ☐ Yes ☐ No ☐ Not Applicable Total Bilirubin Prior to Surgery:

Total Albumin Prior to Surgery: A1c Level prior to surgery: Last Creatinine Level Prior to Surgery:

Diabetes: ☐ Yes ☐ No (If Yes →) Diabetes-Control: ☐ None ☐ Diet ☐ Oral ☐ Insulin ☐ Other

Is ☐ Yes ☐ No Diabetes: ☐ Yes ☐ No MELD Score: (System Calculation) Hypertension: ☐ Yes ☐ No
Endocarditis: ☐ Yes ☐ No
Infectious Endocarditis Type: ☐ Treated ☐ Active
Infectious Endocarditis Culture: ☐ Culture negative ☐ Staphylococcus aureus ☐ Streptococcus species
☐ Coagulase negative staphylococcus ☐ Enterococcus species ☐ Fungal
ng Disease: ☐ No ☐ Mild ☐ Moderate ☐ Severe
Function Test Done: ☐ Yes ☐ No
FEV1 % Predicted: ☐ Yes ☐ No
DLCO Test Performed: ☐ Yes ☐ No
DLCO % Predicted: ☐ Yes ☐ No
Oxygen Level: ☐ Yes ☐ No
Carbon Dioxide Level: ☐ Yes ☐ No
Pulmonary Meds or Drugs: ☐ Yes ☐ No
Lung Disease: ☐ Yes ☐ No
Peripheral Artery Disease: ☐ Yes ☐ No
Carotid Artery Disease: ☐ Yes ☐ No
Syncope: ☐ Yes ☐ No
Prior CVA: ☐ Yes ☐ No
Prior CVA-When: ☐ Recent (<2 wks) ☐ Remote (>2 wks)
CVD Cardiac ischemia: ☐ None ☐ Right ☐ Left ☐ Both
CVD TIA: ☐ Yes ☐ No
CVD Stroke: ☐ Yes ☐ No
Severity of stenosis on the right carotid artery: ☐ 0-50% ☐ 50-99% ☐ 100%
Severity of stenosis on the left carotid artery: ☐ 0-50% ☐ 50-99% ☐ 100%
History of previous carotid artery surgery and/or stenting: ☐ Yes ☐ No
Alcohol Use ☐ 1-2 drinks/week ☐ 3-4 drinks/week ☐ >4 drinks/week
Cancer Within 5 Years: ☐ Yes ☐ No
Wash Test Done: ☐ Yes ☐ No
Time 1: (secs) Time 2: (secs) Time 3: (secs)

as Cardiac Interventions
Is CAB prior to current admission: ☐ Yes ☐ No
Previous Aortic Valve Replacement - Surgical: ☐ Yes ☐ No
Previous Aortic Valve Repair - Surgical: ☐ Yes ☐ No
Previous Mitral Valve Replacement - Surgical: ☐ Yes ☐ No
Previous Mitral Valve Repair - Surgical: ☐ Yes ☐ No
Previous Tricuspid Valve Replacement - Surgical: ☐ Yes ☐ No
Previous Tricuspid Valve Repair - Surgical: ☐ Yes ☐ No
Previous Pulmonic Valve Replacement - Surgical: ☐ Yes ☐ No
Previous Aortic Valve Balloon Valvuloplasty: ☐ Yes ☐ No
Previous Mitral Valve Balloon Valvuloplasty: ☐ Yes ☐ No
Previous Transcatheter Valve Replacement: ☐ Yes ☐ No
Previous Percutaneous Valve Repair: ☐ Yes ☐ No
Indication for Reoperation: ☐ Structural Prosthetic Valve Dysfunction
☐ Non-structural prosthetic valve dysfunction

Is Prosthetic Valve Endocarditis
☐ Yes ☐ No
☐ Valve Thrombosis
☐ Failed Repair
☐ Repeat valve procedure on a different valve
☐ Other

Exact Date of Previous Valve Procedure Known: ☐ Yes ☐ No
Date of Previous Valve Procedure: (mm/dd/yyyy)
Estimate Number of Months Since Previous Valve Procedure: (mm/dd/yyyy)
us Other Cardiac: ☐ Yes ☐ No
us Congenital: ☐ Yes ☐ No
us CD (Implantable Cardioverter/Defibrillator): ☐ Yes ☐ No
us Pacemaker: ☐ Yes ☐ No
us PCI (Percutaneous Coronary Intervention): ☐ Yes ☐ No
us PCI Performed Within This Episode of Care: ☐ Yes, at this facility ☐ Yes, at some other acute care facility ☐ No
us PCI Indication for Surgery: ☐ PCI Completion
☐ PCI Failure without Clinical Deterioration
☐ PCI/ASD Hybrid Procedure
PCI Stent: ☐ Yes ☐ No
PCI Stent Type: ☐ Bare metal ☐ Drug-eluting ☐ Unknown
PCI Internal: ☐ <4 hours ☐ 4-8 hours
Previous Cardiovascular Intervention: ☐ Yes ☐ No

Page 2 of 14

Page 3 of 14

Page 4 of 14

Page 5 of 14

Page 6 of 14

Page 7 of 14

Page 8 of 14

Page 9 of 14

Page 10 of 14

Page 11 of 14

Page 12 of 14

Page 13 of 14

Page 14 of 14



The Society of Thoracic Surgeons
Adult Cardiac Surgery Database
Data Collection Form Version 2.73
January 14, 2011

A. Administrative

Participant ID: PartID (40)	Record ID: (software generated) RecordID (50)	STS Cost Link: CostLink (60)	Patient ID: (software generated) PatID (80)
---------------------------------------	---	-------------------------------------	---

B. Demographics

Patient Last Name: PatLName (90)	Patient First Name: PatFName (100)	Patient Middle Name: PatMName (120)
--	--	---

- STS Version Change Every 3 years – 2011 “2.73”
- Largest STS Upgrade in 25 years
- STS Data Collection Form 9 Pages ->16 Pages
- Core Data Elements 342 -> 717
- Data Specifications Manual (Definitions & FAQ's)
 - 168 -> 695 Pages

Many Data Elements !

- Demographics
 - Race, Address, Ethnicity
- Hospitalization
 - Insurance, Admit Source & Type, Dates
- Risk Factors: Comorbidities
 - HTN, DM, COPD, Labs, CV Disease, ETOHUse
- Previous Cardiac Interventions
 - Operation Type, Reop Reason, ?PCI, Stent

2.73 Data Elements Categories

- Preop Cardiac Status
 - Prior MI When, Anginal Class, CHF Class, Arrhythmias & When
- Preop Medications
 - BB, ASA, ACE/ARB, Anticoagulants, Steroids, ADP Meds: When Given
- Hemodynamics & Heart Catheterization Info
 - Cath Results, Echo Results, Valve Etiology, EF%, & How Obtained, Systolic Dimensions

2.73 Data Elements Categories

- Operative Information
 - Case Status (Elective, Urgent, Emergent)
- Operation & Specific Procedure Info
 - CAB, Valve, LVAD, Aorta OR, Arrhythmia OR
 - Intraop Testing, Blood Use, Anesthesia Info
- Postoperative Course Info
 - Blood Use, Extubation Time, Highest Creatinine

2.73 Data Elements Categories

- Postoperative Complications
 - Operative, Neuro, Renal, Vascular, Infection, Pulmonary, Other (Afib, GI, Cardiac Arrest)
- Discharge
 - Location, Medications Prescribed
- Mortality
 - When, Where, How, Why
- Readmission within 30 days of Procedure & Discharge

2.73 Effects

Many Challenges !



Not Easy Answers



Confusing



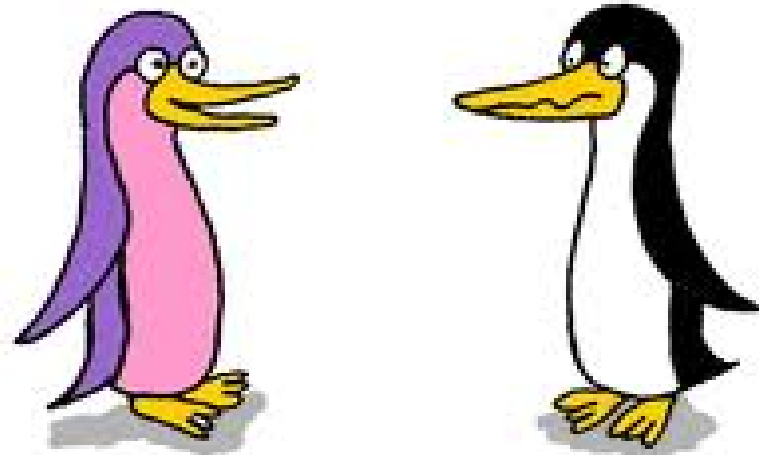
Headaches





Data Abstraction is
Not
Black & White !





'It's not always black and white.'

©joy-of-cartoon-pictures.com

Rob



**If It Were – You Might Not be
Needed..... and
Any Chimpanzee could Abstract
Your Data!**

Remember: Job Security!

You are Not Alone!



Helping Each Other Important

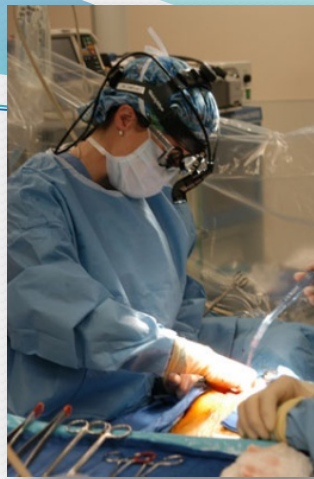
STS Data Abstraction = A Team Sport for Survival !



STS Data Manager



RN's ICU & Stepdown



Surgeon



OR Team Personnel



Perfusionist

The Society of Thoracic Surgeons
Adult Cardiac Surgery Database
Data Collection Form Version 2.73
 January 14, 2011

A. Administrative
 Participant ID: [software generated] STS Cost Link: [software generated] Patient ID: [software generated]

B. Demographics
 Patient Last Name: [] Patient First Name: [] Patient Middle Name: []
 Date of Birth: [] Patient Age: [] Sex: ☐ Male ☐ Female
 Social Security Number: [] Medical Record Number: []
 Patient's Address: []
 Street Address: [] City: []
 Region: [] ZIP Code: [] Country: []
 Is This Patient's Permanent Address: ☐ Yes ☐ No
 (If No --) Patient's Permanent Address: []
 Street Address: [] City: []
 Region: [] ZIP Code: [] Country: []
 Race (Select all that apply):
 White: ☐ Yes ☐ No Black/African American: ☐ Yes ☐ No
 Asian: ☐ Yes ☐ No Am Indian/Alaskan Nat: ☐ Yes ☐ No
 Native Hawaiian/Pacific Islander: ☐ Yes ☐ No Other: ☐ Yes ☐ No
 Hispanic, Latino or Spanish Ethnicity: ☐ Yes ☐ No
 Referring Cardiologist: [] Referring Physician: []

C. Hospitalization
 Hospital Name: [] (If Not Missing --) Hospital ZIP Code: [] Hospital State: []
 Hospital National Provider Identifier: []
 Payer (Select all that apply):
 Government Health Insurance: ☐ Yes ☐ No Medicare: ☐ Yes ☐ No Health Insurance Claim Number: []
 Medicaid: ☐ Yes ☐ No Medicare Fee For Service: ☐ Yes ☐ No
 State-Specific Plan: ☐ Yes ☐ No Military Health Care: ☐ Yes ☐ No
 Correctional Facility: ☐ Yes ☐ No Indian Health Service: ☐ Yes ☐ No
 Commercial Health Insurance: ☐ Yes ☐ No
 Health Maintenance Organization: ☐ Yes ☐ No
 Non-US Insurance: ☐ Yes ☐ No
 None / Self: ☐ Yes ☐ No
 Arrival Date: [] Arrival Time: [] (in am or 24 hour clock) Admit Date: []
 Admit Source: ☐ Elective Admission
☐ Emergency Department
☐ Transfer in from another acute care facility (If Transfer --) Other Hospital Performs Cardiac Surgery: ☐ Yes ☐ No
☐ Other
 Surgery Date: [] Discharge Date: []

D. Risk Factors
 Weight (kg): [] Height (cm): []
 Cigarette Smoker: ☐ Yes ☐ No Current Cigarette Smoker: ☐ Yes ☐ No
 Other Tobacco Use: ☐ Yes ☐ No
 Family History of Premature Coronary Artery Disease: ☐ Yes ☐ No Last Hematocrit: [] Last WBC Count: []
 Platelet Count Prior to Surgery: [] International Normalized Ratio prior to Surgery: []
 HIT Antibodies: ☐ Yes ☐ No ☐ Not Applicable Total Bilirubin Prior to Surgery: []
 Total Albumin Prior to Surgery: [] Last Creatinine Level prior to surgery: []
 Diabetes: ☐ Yes ☐ No Diabetes-Control: ☐ None ☐ Diet ☐ Oral ☐ Insulin ☐ Other

© The Society of Thoracic Surgeons 2011 Page 1 of 14



Data Manager

Michigan Data Managers

- Educational Meetings since 2001
 - Quarterly since 2005
- Goals:
 - Data Consensus in STS Abstraction
 - Improve Michigan Data Integrity
 - Improve Patient Outcomes

Michigan Data Managers

- Getting Together is Beneficial
 - Education
 - Networking
 - Collaboration
- Help Each Other
 - Share Joys & Divide Grief !

Helping Colleagues and



Teamwork are Essential !

Michigan Data Managers

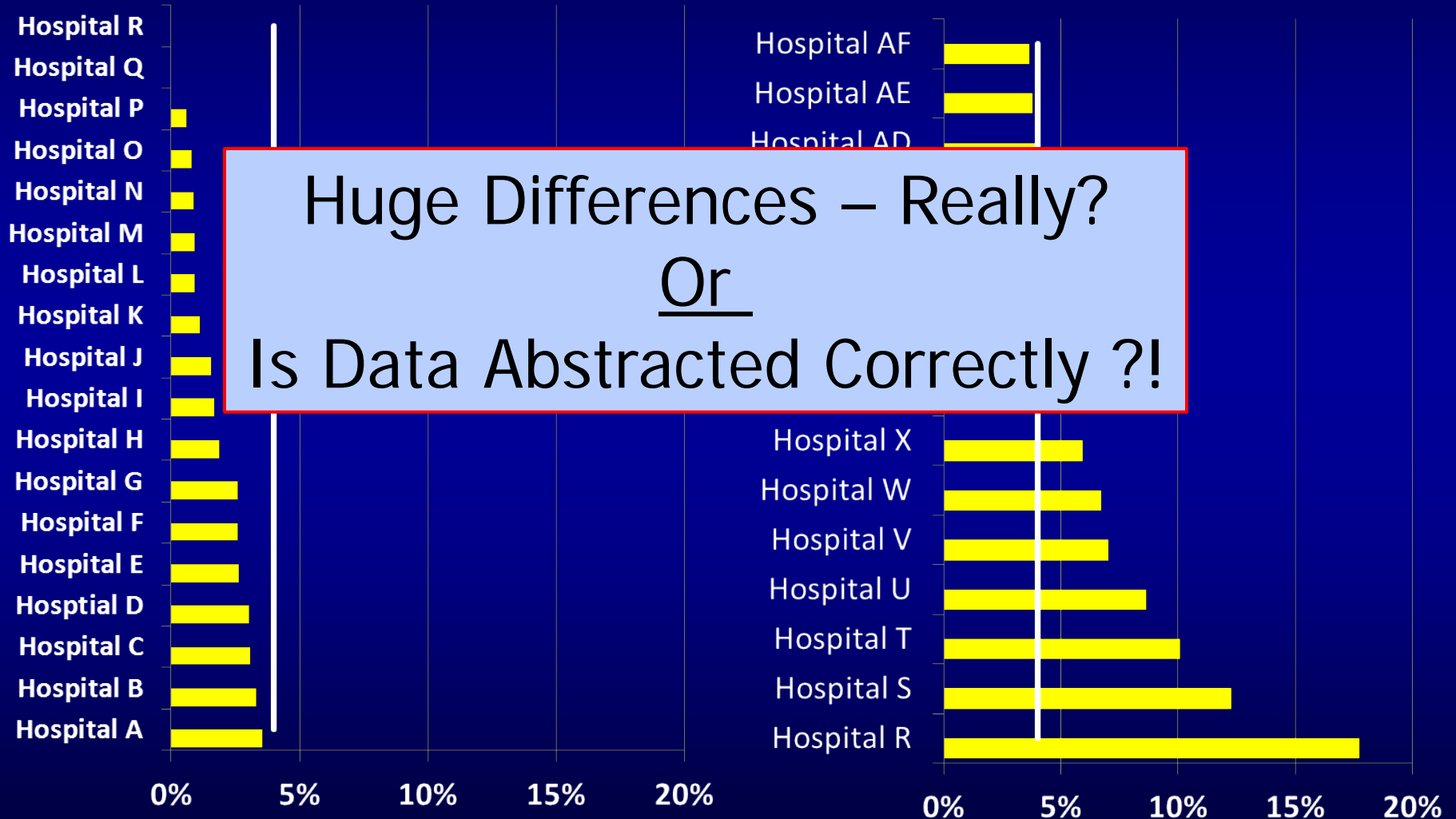
- Data Accuracy & Integrity Improves Through:
- Data Manager Meetings
 - Networking, Collaboration & Education
- Audits
 - MSTCVS Site Audits
 - National STS Audits



Isolated CAB

Pleural Effusion requiring drainage

July 2011 – June 2012



Audits are Like Baby Monitoring

Well Baby Check-Ups Needed for a Healthy Database !



I Don't
Like
Surprises



No
Worries
Here !



MSTCVS Site Audits

- Mutual Education Process
- Audit Score = % CQI Performance Measures
- Not Punitive
- Goal: Increase Outcomes Accuracy for MSTCVS



MSTCVS Audit Process

- 2 Audit Types:
- On Site – 2 of Us Travel to Hospital Site
 - 2 RN Colleagues
 - MSTCVS Coordinating Center – Ann Arbor
- 2 Days to Complete Chart Reviews
 - Re-Abstract Selected Data Variables
 - Includes Risk Model Variables
 - Risk Models from National STS Harvests
 - Predicted Risk of Mortality, Renal Failure, etc.

MSTCVS Audit Process

- Remote/Desk Audit
 - Jaelene Alone
 - ~ 2 weeks to Complete
 - Regular Job Continues
- Electronic Access to Site EMR
 - Decreased Winter Travel!
 - Port Huron & St. John Detroit
 - December & January

MSTCVS Audit Process


- 20 Charts per Site
 - 10 CAB
 - 4 AVR
 - 2 MV Repair
 - 2 MVR
 - 2 Other Cases
 - Elective, Urgent, Emergent Case Types
- 2 Mortality Charts
- 30 Day F/U Process Check
- Consecutive Cases Log for 2 Months
 - May & June Cases for 2012
 - Will change with Quarterly Data Harvested

Audit Variables

- + Weighted Audit Variables
 - Missed Mortality vs Missed Height
- Any Risk Model Variable is Possible
 - Not Every Element Audited
 - Currently Auditing 80 Variables
- Selected Some New 2.73 Variables
 - Monitor Upgrade Process
 - Many Challenges -> Barometer Check

Site Receives Preliminary Audit Summary for All Charts Reviewed


1. MR #921926 – CAB Mortality

Postop Events: Missed PO Atrial Fibrillation. 

2. MR #72684974 – Emergent CAB

Operative: Chart states Intraop TEE was performed, no abstraction completed of data.

Site Data Manager Reviews for Mistakes from MSTCVS Auditors After Agreement – Finalized and Scored for Star Rating

Operative: Intraop Blood: One bag of Platelets abstracted as 5 units. Should be 1 unit only. 


4. MR #1181951 – Other Mortality – CAB, MVR, TVR, CEA

Preop Cardiac Status: Prior MI missed.

Postop Events: PO Atrial Fibrillation missed.

5. MR #1095554 – CAB

Preop Cardiac Status: Cardiac Presentation on Admission: Abstracted as Stable, documented in chart to meet criteria for Unstable.

Operative: Status of Procedure abstracted as Elective should be Urgent. 

Audit Process

- + Education for Non Audited Variables
 - Family Hx – “Strong” per Cardiology
 - No Documented Ages
 - Must meet STS Age Criteria to Qualify
- Information as an FYI – Audit Summary
 - No Point Deductions
- Track “FYI”s -> Future DM Meetings
 - Education Needs

Audit Summary

- Letter with Star Rating Score
- Suggestions for Process Improvement PRN
 - ? Areas of Frequent Error



Portion of MSTCVS Overall Performance Score per Year – Tied to CQI \$\$
4 or 5 star= 10pts, 3 star=5 pts, 2 star=0 pts

STS National Audits 2012

- 54 total audits

- On site Audits 15 audits
- Desk Audits 39 audits
 - Remote Access 11 sites
 - CD 14 sites
 - Paper 14 sites

National STS Audits



- Michigan National Audits - 2013
 - Sparrow Hospital – Lansing
 - Covenant Hospital – Saginaw
 - Lakeland Regional – Saint Joseph
- Past National Audits:
 - Beaumont, Borgess, Henry Ford Macomb, & Oakwood

Audit Lessons ?

Some Perspective.....



- 1st Audit of 2.73 Version
- Started in September 2012
 - Year Long Process – All 33 Sites
- Core Data Elements - Doubled
- STS Data Collection Form → 16 Pages
- Remind Surgeons – Part of the Team Help !

8 Site Audits: Sept. - April

- 5 On-Site Audits Completed:
 - Spectrum
 - McLaren MaComb
 - Sinai-Grace
 - McLaren Flint
 - Henry Ford Detroit
- 3 Remote Audits
 - Port Huron
 - St. John Detroit
 - University of Michigan

Audit Lessons Learned

- Preop Phase = Most Errors All Sites
- STS 2.73: Increased Preop Variables
 - Patient Risk Profiles & Risk Models
 - MELD Score, Home O², Sleep Apnea, Cancer 5 Yrs, ETOH levels, Illicit Drug Use, Frailty Index, Recent or Remote Pneumonia, CHF, Angina Classification....
- Quandary: Cardiac Surgery: ? Preop Involved
 - Dependent on Cardiology/Medicine Documents
- Difficult STS Data Capture Preop Phase

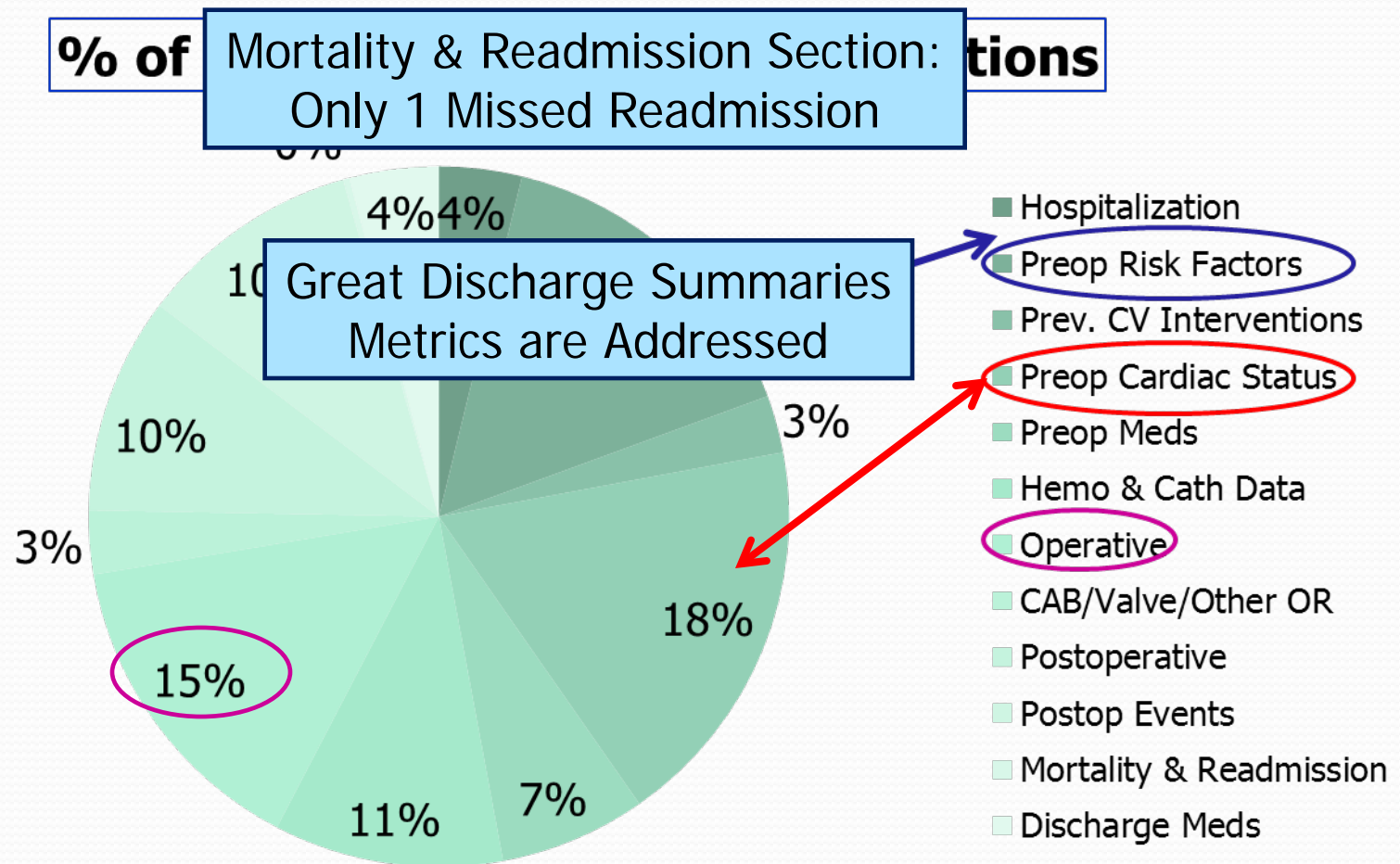


Audit Lessons Learned

- 2nd Area=STS “Operative” Area
 - Not OR Cases
- STS 2.73 Increased O.R. Variables
 - Canceled Case, Type, Reason
 - Unplanned Procedure Type & Reasons
 - Appropriate ABX & Timing, Intraop TEE Results
 - Echo Assessment of Aorta/Arch
 - Intraop Blood Product Capture
- OR Team & Surgeon Help



Data Abstraction Errors



8 Sites Combined # of Errors

Improvement Opportunities

- Sites: Increase Focus on Preop Elements
 - Describe CHF & Angina Symptoms
 - Detailed H & P, ? Mid Level Education
- Surgeon Op Note Very Important!
 - What transpired that led to the OR?
 - Detailed, Dictated Op Notes
- Surgeon Story is the Best Summary!
 - Dictate Preop and Intraop !

Data Integrity is the Foundation:

- ✓ Practice Guidelines/Benchmarks
- ✓ Paper & Data Presentations
- ✓ Improved Patient Outcomes



Otherwise, Things are Broken!



Accurate Data is Everyone's Responsibility !

**If It Was Not Documented –
It Was Not Done!**



STS Data Abstraction is a Team Sport!



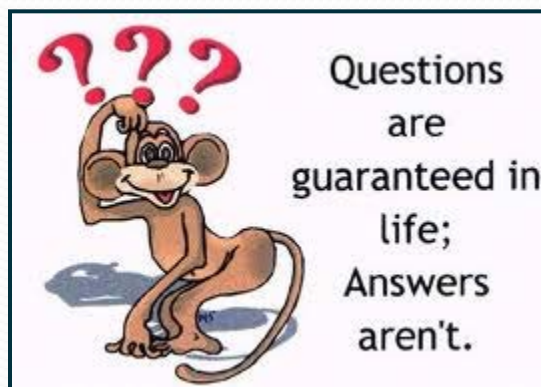
Surgeons: Help Make Data a Team Responsibility!

MSTCVS Audit Goals

- Guide/Re-evaluate Data Manager Training Ongoing
 - Quarterly DM Education Meetings
 - DM Workshop Training -> Yearly
 - May 10th : 10 am – 4 pm
- Help Develop Best Practices for Data Abstraction 2.73 & beyond....
 - January 2014 New STS Upgrade Begins

MSTCVS Audit Goals

- Ongoing Review of Audit Scoring Methodology for Updating PRN
 - Discussions with MSTCVS Quality Committee Surgeons
- Sites Need to Review Audit
 - Please Provide Us Feedback
 - Continued Improvement



Trauma Center Data Management: The Value of Trauma Registries and Trauma Registrars

- * Judy Mikhail
- * MTQIP Program Manager
- * 6.4.13

Objectives

1. Discuss the past, present and future of trauma registries
3. Discuss the future of the HIM careers in the era of exploding electronic health information

Disclaimer

* Everything I learned about trauma data management I learned with and from the trauma registrars I have been privileged to work with:

- * Yvette Harris for the first 10 years
- * Renee Link for the next 5 years
- * Cecilia Roiter for the last 5 years

Trauma Registrars...

- * Trauma Registrars protect your back
- * Trauma Registrars push you forward
- * Trauma Registrars make everyone in the trauma program look better than they really are
- * The Trauma Registrar position is the basis from which you grow your entire program



To know where you are going

You must look to the past

Origin of Trauma Registries

Pollock & McClain JAMA 1989

- * First Trauma Registry:
 - * Cook County Hospital, Chicago 1969
- * Trauma Registries expanded along with trauma system development
- * **Essential component of organized trauma system**
- * 1988 AMA called for prompt establishment of state trauma registries across the US

1988 CDC Trauma Registry Workshop

- * To establish recommendations for trauma registries:
 - * ACS
 - * ACEP
 - * AMA-EMS
 - * NHTSA
- * CDC beta tested basic trauma registry software
- * Tested at 2 large inner city trauma centers and a small rural hospital

CDC 1988

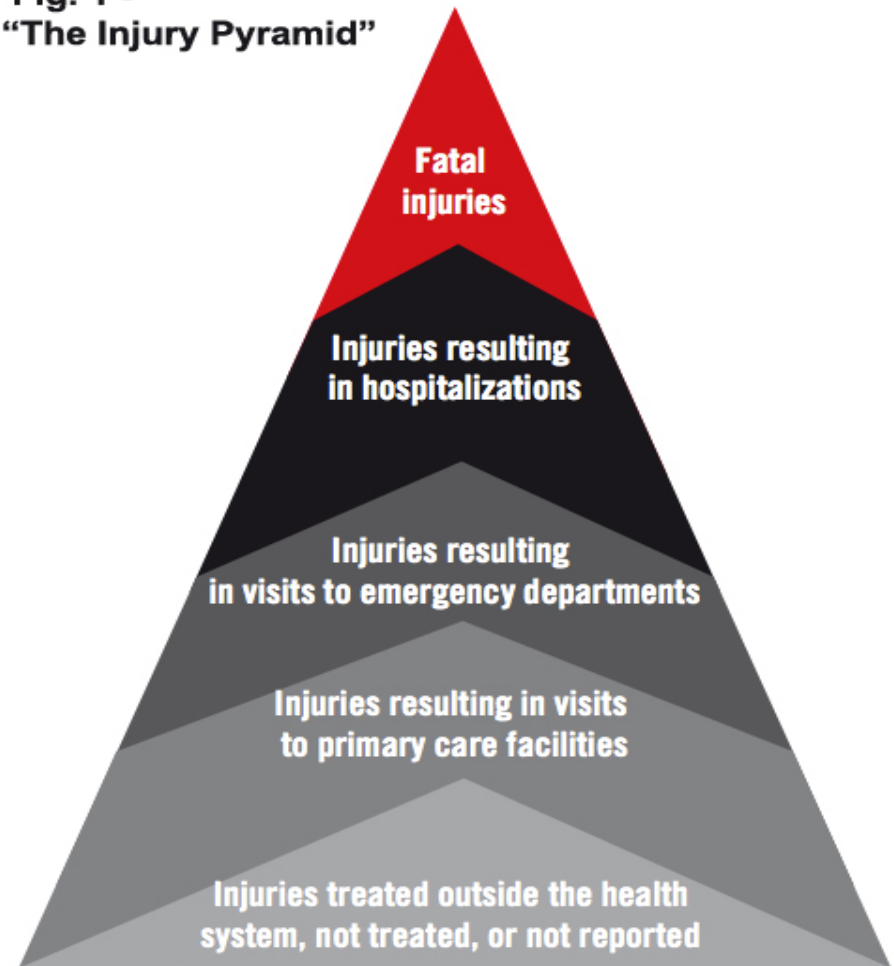
Trauma Registry Purpose

- * Assessment of quality of care for the hospitalized trauma patient
- * **NOT intended for:**
 - * surveillance
 - * population based rates of injury
 - * does not include all injuries

Registries and Surveillance

- * There is a need for surveillance but a trauma registry is not designed for this
- * No single database is likely to meet state or national surveillance needs
- * Combining data sources is feasible

**Fig. 1 -
“The Injury Pyramid”**



Source: WHO

1988 CDC Inclusion Criteria

- * **800-959 ICD9-CM**
- * Excluding poisoning, asphyxiation, immersions, exposures to temperatures
- * (Exclusions because most hospitals don't have the resources to capture these...)

1988 CDC The Trauma Registry is for: Quality Assurance Practices

- * Data collection should be as simple as possible
- * Focus on the principle task at hand
- * Periodic review of selected process and outcome measures
- * Summary statistics of audit filters direct those problems that warrant more detailed peer review
- * Assess mortality with appropriate adjustments for the mix of injury complexity (*early reference to crude Benchmarking?*)

Direct quotes from 1988 article....

Written >25 years ago or today?

- * *There is a tendency to underestimate the time and resources required to develop a functional registry*
- * *Data collection frequently commences in the absence of a clear plan of how the information will be used...*
- * *Staffing of trauma registries is often insufficient*
- * *Procedures for ensuring data quality, including training of registry personnel, tend to be uninformative, frequently delayed or overlooked*

Direct quotes from 1988 article....

Written >25 years ago or today?

- * *In most hospital settings, physicians are responsible for the registry, however they are rarely involved...*
- * *Frequently, a trauma nurse coordinator is placed in charge, often without the benefit of prior experience or training in coding or data management*
- * *In addition to registry responsibilities, trauma nurse coordinators also have clinical or administrative duties which limit the coordinators capacity to use the registry for problem solving and staff education*

CDC Trauma Registry

Concerns

- * Incomplete case finding —————> selection bias
- * Uneven data quality —————> poor documentation
- * Lessons from the cancer registry:
 - * Higher caliber registries are integral to the clinical service rather than as separate and distant appendages
 - * Poor selection of registry location can limit routine interaction with physicians
 - * Meaningful physician involvement is required
 - * Formal staff training and continuing education is required

CDC

Registry Efficiencies

- * Personnel must continually assess registry and periodically refine it (*pruning*)
- * Incorporate automated data systems by linking with other databases
- * Use of abbreviated abstract and regular abstract
- * Streamline processes, lean systems
- * Be ruthless with efficiency!

CDC

Registry Efficiencies

- * Data Abstraction
 - Unplugged: Going Wireless (Geisinger)
- * 2005 Eisenhower, et al AHIMA
- * Hospital investment
 - \$130,000 installation
- * 4 PC tablets
- * 8:15-9 am Patient list update
- * 9-9:10 am Joint decision on
 - * concurrent cases
- * 9:15 -12N Closure of old cases
- * 12:30 – 3 Concurrent abstract
- * 3:30-4:30 Completion and
 - * closure of old cases
 - * submissions to state

Dual vs Single Computer Monitor

Poder, et al 2011 JHIM

- * Comparison of coders using single monitor with those using dual.
- * Only difference of 37 seconds in favor of dual!
- * However, dual had highest coder satisfaction rating
- * Extrapolated over a 5-year period
- * Represents a 3.1% time savings
- * Net cost savings of \$7,729 for each workstation at 35 hours a week processing records

Registry Cost Per Patient

- * Victorian (Australia) State trauma registry estimates each patient record costs approximately \$85 US
- * Inherent registry costs make it vulnerable to cost cutting

Data Validation is Clearly Needed

- * **2003 NTDB**
- * 25% records excluded:
 - * Age
 - * Gender
 - * Hospital LOS
- * Data entry error rate for unknown or missing info:
 - * 76% Hospital transfer
 - * 34% E codes
 - * 19% GCS

Data Validation

- * Essential to ensure quality of data
- * Internal data validation processes
 - * What works?
 - * Will you still continue even with MTQIP's external validation process?

Registry Linkages Are (will be) The New Norm

- * EMS records
- * Police records
- * Rehabilitation records

Injury Specific Registries

- * Brain injury registries
- * Spinal injury registries
- * Organ donation registries
- * Burn registries
- * Pediatric trauma registries

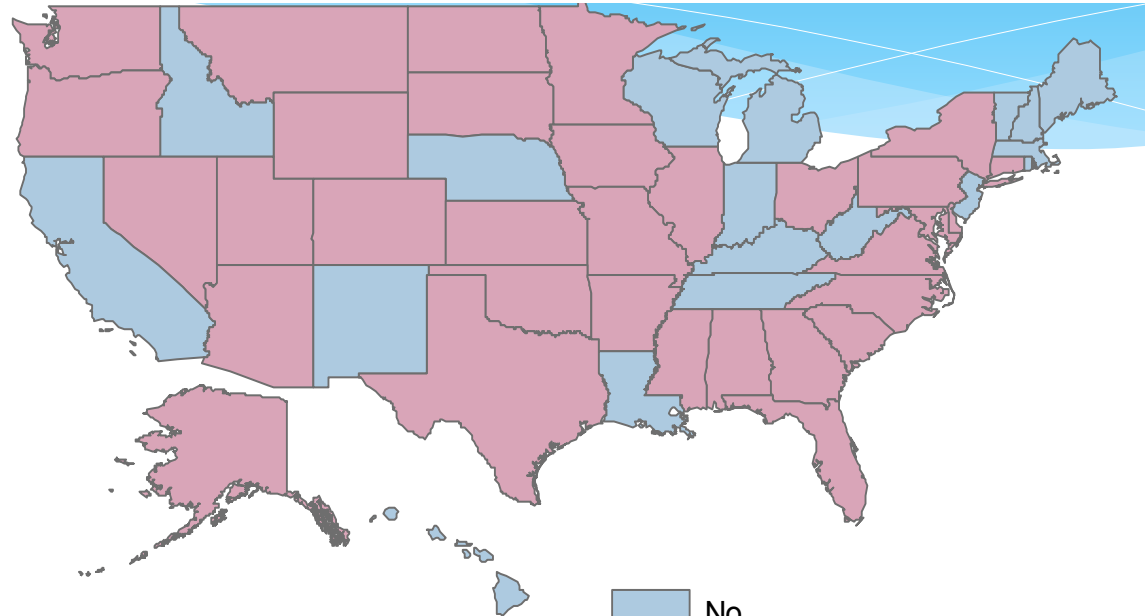
Comparability of State Registries (Mann, 2006)

- * Need for a National Registry Standard
- * State of the State Registries Variability in Data Quality
 - * Case Acquisition
 - * Case Definition
 - * Coding Conventions

Data Inconsistencies Exist

- * States and Trauma Registries
 - * 32 states have statewide registries
 - * 13 states (and DC) are discussing, planning, or developing a registry
 - * 5 states have no plans for a registry

States with Statewide Registries



No
Yes

Planning – CA, DC, ID, KY,
LA, ME, MA, MI, NE, NM,
TN, WV, WI

Technical Difficulties – ND, SD

No Plans – HI, IN, NH, NJ,
RI, VT

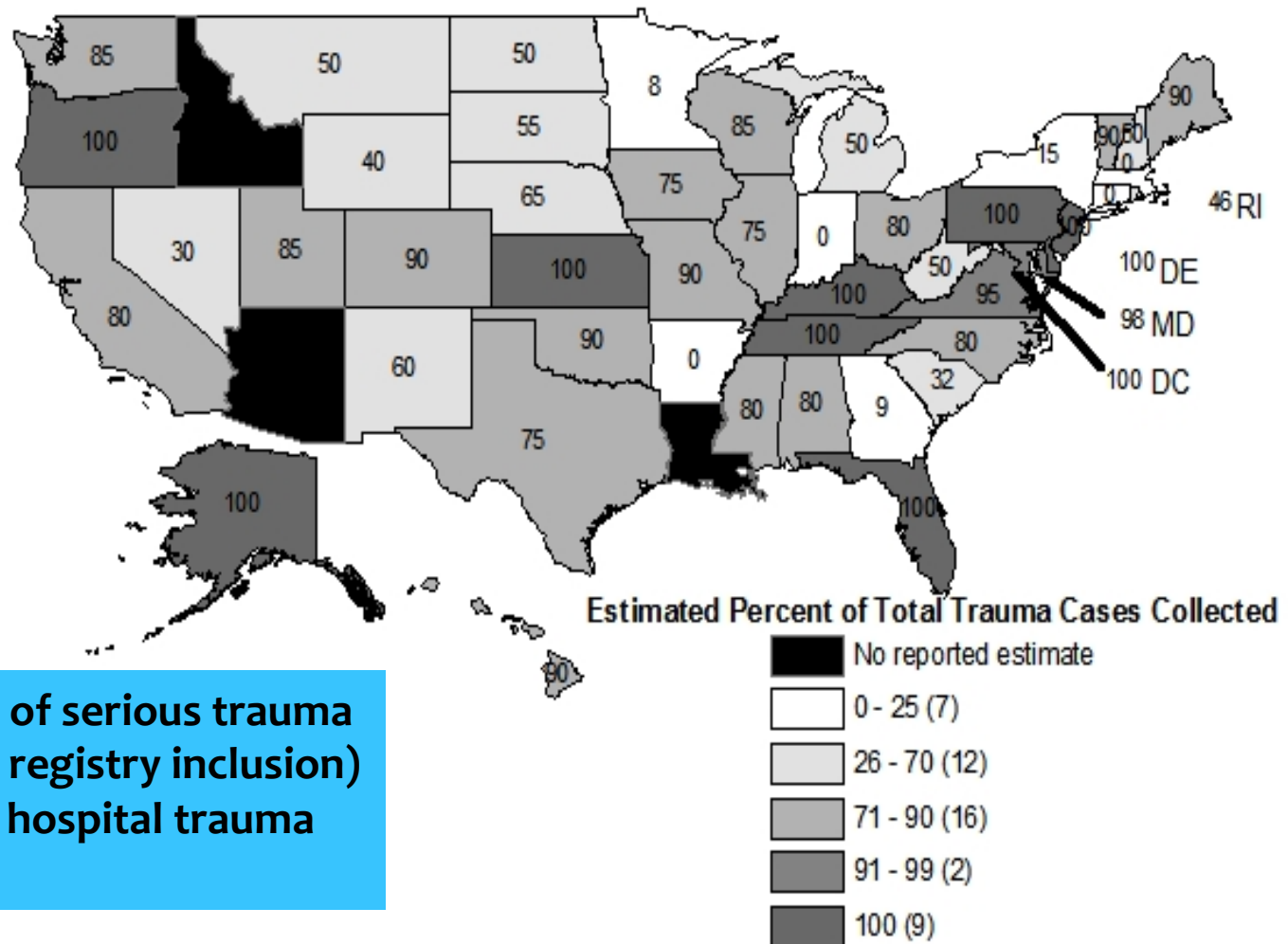
States with Registries

- * 27/32 require hospitals to report
 - * 11 states...all acute care hospitals
 - * 15 states...only designated centers
 - * 1 state...only participating hospitals
- * 5/32 request hospitals report
 - * 2 states...all acute care hospitals
 - * 1 state...only designated centers
 - * 2 states...partial registries

Threats to Data Integrity

- * Mandatory/elective Submission
 - * Completeness of Case Capture
- * Difference in Case Definition
- * Difference in Coding Conventions

Variation in Case Acquisition



What proportion of serious trauma (meeting trauma registry inclusion) is included in the hospital trauma registry?

Variability in Case Definition

<u>Inclusion Criteria</u>	<u>Number</u>	<u>Exclusion Criteria</u>	<u>Number</u>
Abuse	4	Abuse	3
Blisters, contusions, abrasions	3	Blisters, contusions, abrasions	11
Drowning	13	Drowning	15
Smoke inhalation	7	Smoke inhalation	2
Foreign bodies	5	Foreign bodies	17
High altitude sickness	0	High altitude sickness	1
Lightning	5	Lightning	0
Same level fall	2	Same level fall	18
Poisoning	2	Poisoning	13

Variability in Case Definition

* Variability in “same-level fall” exclusion

- * Same level fall AND age > 55 yrs old
- * Same level fall AND age > 65 yrs old
- * Same level fall AND isolated hip fracture (ICD-9 820)
- * Same level fall AND fracture of the vertebral column (ICD-9 805)
- * Same Level fall AND isolated fracture of the pelvis (ICD-9 808.2)
- * Same level fall AND superficial injury (ICD-9 910-924)
- * Same level fall AND age > 65 yrs old AND isolated hip fracture (ICD-9 820)
- * Same level fall AND age \geq 65 yrs old AND isolated extremity fracture (no ICD-9 codes listed)

Variability in Coding Conventions

Glasgow Coma Score in ED

- * 15 states.....initial GCS
- * 8 states.....initial and last GCS
- * 1 state.....worst GCS
- * 1 state..... best GCS
- * 1 state.....initial and worst GCS

Variability in Coding Conventions

Time of Injury

<u>Coding Convention</u>	<u>Number of States</u>
Report “Not documented”	10
Report EMS dispatch time	8
Report 5 minutes prior to EMS dispatch time	2
Report 15 minutes prior to EMS dispatch time	1
Report 5 to 20 minutes prior to EMS dispatch time depending on call location and general scene info	1
Report EMS dispatch time only if MVC	1
Report EMS arrival time	1
Report in categories (< 1 hour, 1-6 hours, 7-12 hours, 13-24 hours, or >24 hours)	1

Variability in Coding Conventions

* Consistent use of e-codes

“24 YO FedEx driver was involved in a motor vehicle crash while working. Impact of crash was on driver’s side; pt. was unrestrained”

E812.0 – MVC involving collision with a MV (15 states)

E819.0 – MVC of unspecified nature (8 states)

E849.5 – Street & highway (12 states)

E849.3 – Industrial place (4 states)

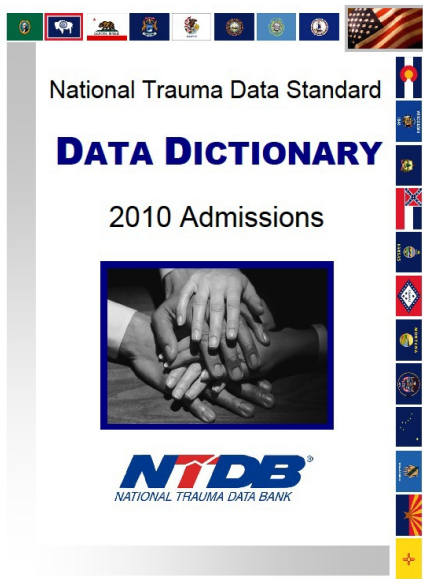
The National Trauma Data Standard


National Minimum
Trauma Data Set

Additional TQIP/MTQIP Data
Elements

State Trauma System
Dataset

Hospital Trauma
Registry



- 
- * The reason for collecting, analyzing, and disseminating information on injuries is to control those injuries and their effects.
 - * Collection and analysis should not be allowed to consume resources if action does not follow.

Adapted from William Foege, Former Director,
Centers for Disease Control and Prevention, 1976

Processes of Care: Why

* Venous Thromboembolism Prophylaxis

- * 1 million DVT/PE in US annually, 1/3 fatal
- * Largely considered a preventable disease
- * But optimal approach for prophylaxis is unknown!
- * Options: Compression devices, vena cava filters, drugs
- * But in whom and when? Especially difficult in TBI's
- * **Tremendous variation** in practice across centers
- * Rich opportunity to identify differences in prophylaxis schemes and their effects on outcomes!!!
- * MTQIP leads! You are part of history!

Processes of Care: Why

* Traumatic Brain Injury

- * National guidelines support ICP monitoring for severe TBI
- * Yet compliance is variable at best
- * Benefits of guideline remains unproven
- * Compare monitor timeliness and compliance with outcomes!
- * Why are Trauma Surgeons/NS's not placing them?
- * It's like you are unraveling a 100 year old mystery!!
- * You are part of the action! MTQIP rocks!

Processes of Care: Why

- * **Blood:**

- * Who is using blood, when, where and how much?
- * In what ratios?
- * Application of military learning to civilian centers
- * Hope to reveal RBC to Plasma ratios effect on outcomes!
- * Will our blood use decrease over time as ratios increase?
- * Will you be personally responsible for saving the state of MI millions of dollars in the process???? We hope so!
- * Stay tuned!!! MI trauma registrars will be famous!
- * The world is watching you!!



This is an exciting time to be in HIM!

The Future of Digital Health

Vision 2016 AHIMA

1. Increase # of HIM professionals with graduate degrees

- * Learn More, Earn More
- * Better job opportunities
- * Higher salaries

2. Associate Degree Specialty Tracks

- * Coding
- * Health Data Analytics
- * Project operations (management)
- * e-HIM implementation
- * Physician practice e-HIM conversions
- * Registry Management (Trauma, Cancer, Birth defect, etc.)

3. Faculty and member development of skills:

- * Statistics
- * Research methodology
- * Data integrity
- * Data Governance

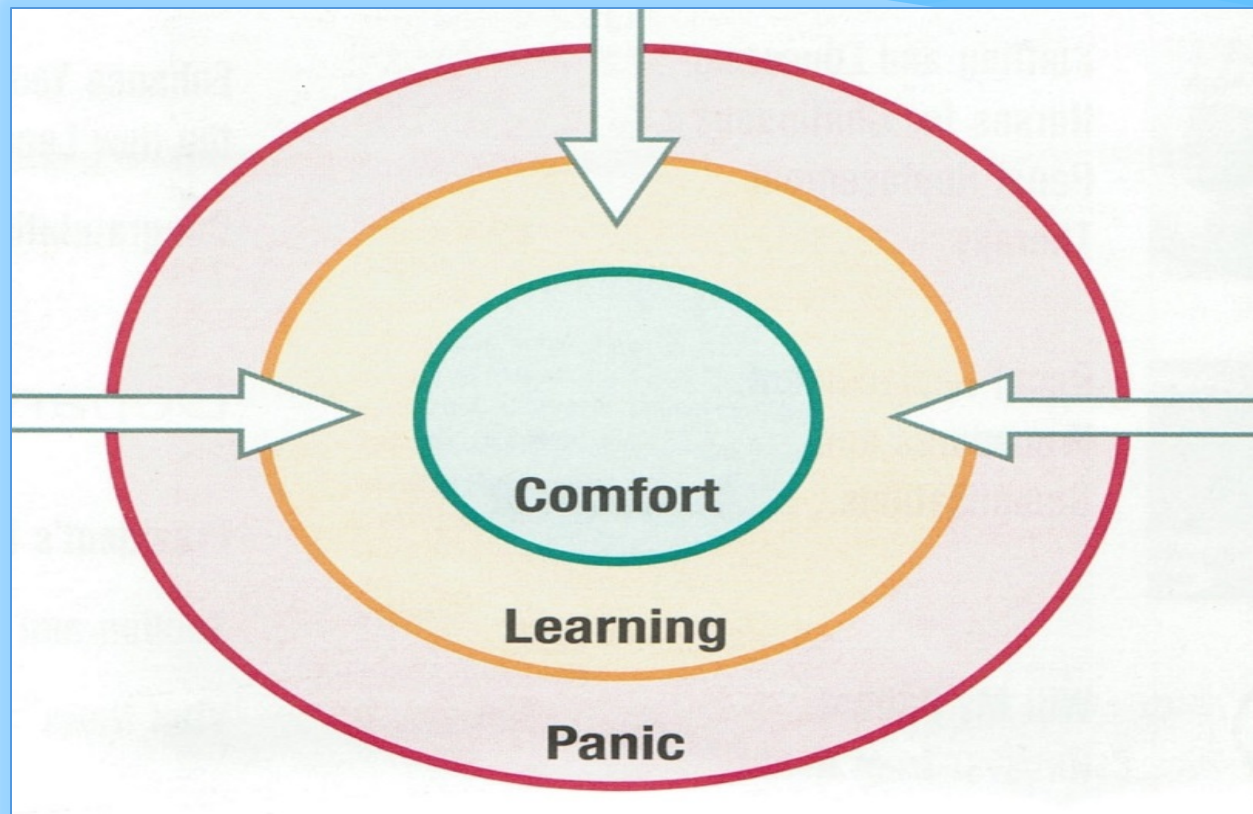
5. Increasing the Qualified Pool of Professionals

- * Create post-graduate certificate for doctoral and master's prepared individuals to obtain an RHIA credential
- * Expand opportunities for those who hold the RHIA credential to obtain masters and doctorate degrees.

2010 AHIMA Salary Survey

- * Masters \$86,187
- * Bachelors \$66,064
- * Associates \$49,769
- For each additional HIM degree, on average, will earn an additional \$15,830.
- Over a 40 year career in HIM this would be more than \$620,000 in earning per degree

Move Beyond Your Current Boundaries



MTQIP Says

Resolution: 1280x1024 px
Free Photoshop PSD file download
www.psdgraphics.com



For all of your hard work!