

Finding the impossible in the improbable time line

Rose

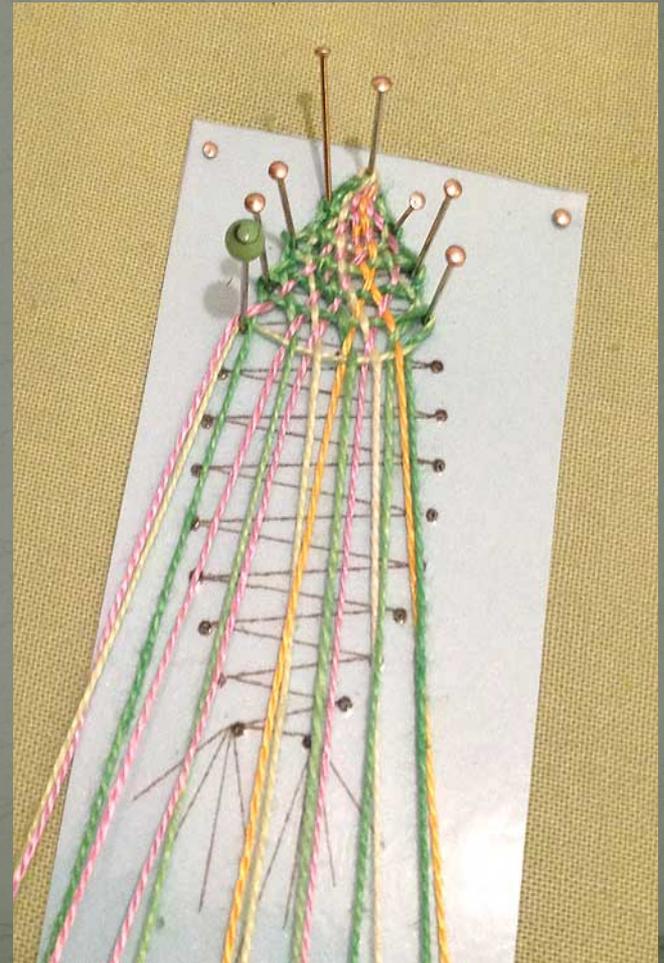
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Demographics

PATIENT INFO										<<	>>
Account No.	Registration No.	Medical Record No.	ED/Hospital Arrival Date			Admit Status					
12653			/ /								
Last Name		First Name		Mid Init	Soc. Sec. No.						
					- -						
Date of Birth	If DOB unknown enter estimated age.	Age	Units of Age	Gender	Race	Ethnicity	State of Residence				
/ /											
State Unique ID		Site ID									
Trauma Center		License Code		Facility Zip							

Demographics

- The Arizona State Trauma Registry Data Dictionary
- Demographics –
 - Face sheet
 - ED Flow sheet documentation
 - Ambulance Run Report
 - Billing information



Injury and Prehospital

INJURY/PREHOSP << >>

Account No. 12653	Last Name _____	First Name _____	ED/Hospital Arrival Date _/_/___	Medical Record No. _____
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Injury Date _/_/___	Injury Time _:_	Injury Location E-code (E849) _	
Zip of Injury _	City of Injury _____	County of Injury _	State of Injury _
Primary Injury E-Code _	CDC MOI _____	CDC Intent _____	
Trauma Type _	Position in Vehicle/Veh Type _____		

Protective Devices

Protective Devices

...

Transport Type
_

Transport Mode
_

Transport From
_

Transport Agency Code
_

System Access (Inclusion Criteria) (all that apply)

1 _	2 _
3 _	4 _

EMS Triage Criteria

Criteria

...

Report of Physical Abuse? _	Investigation of Physical Abuse? _	Caregiver at D/C _
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Injury/Prehospital

- Injury/Prehospital –
 - EMS Run Report
 - ED Flow Sheet Documentation
 - ED Nursing notes
 - ED Physician notes



E-Codes (ICD-9)/Blunt vs Penetrating

- E-Codes follow paths
 - Short cut for E-Codes
- Blunt vs Penetrating
 - If the object was blunt when it hit the skin then it is a blunt injury
 - If the object was Penetrating when it hit the skin then it is a Penetrating injury



ED/Hospital Information

ED/ADMIT							<<	>>
Account No.	Last Name	First Name					Medical Record No.	
12653								
ED / TRAUMA								
ED/Hospital Arrival Date	ED/Hospital Arrival Time	ED Exit Date	Exit Time	ED LOS (Hrs)	ED LOS (mins)			
...					
Signs of Life	ED Discharge Dispo	ED Discharge Destination Hospital	Transfer Delays					
...					
ED/Hosp Initial GCS - Total								
...								
ADMISSION / DISCHARGE								
Admission Date	Inpatient Discharge Date	Inpatient Discharge Time	Inpatient LOS (days)	Inpatient Discharge Disposition				
...				
Inpatient Discharge Destination Hospital	Total LOS (ED + Admission) (days)	Final Outcome	ICU LOS (days)					
...		...						
TOXICOLOGY			FINANCIAL					
Alcohol Use Indicator	Toxicology Substances		Primary Method of Payment					
...	Substance		...					
Blood Alcohol - mg/dL	...		Total Hospital Charges					
...			...					
Drug Use Indicator			Total Hospital Reimbursement					
...			...					

ED/Hospital Information

- ED Flow sheet
- History and Physical
- Physician and Nursing notes
- Lab reports
- Operative, Radiology, Consult notes/reports



Injuries

DIAGNOSIS << >>

Account No. Last Name First Name ED/Hosp Arrival Date Medical Record No.

Injury Diagnoses - ICD-9-CM and AIS 2005

ICD9	AIS Value	Body Part	ICD9 Dx Text
...

Injury Severity Score (ICD9)

Injuries

- Physician notes
- Nursing notes
- Radiology
- Referral letter
- ICD-9 Code book nearby at all times
- Short cut ICD-9 Codes for Trauma

Questions????????

- Is there any way for the registry to capture the input on the first try to speed up the data entry process?
 - Have as much of the chart available as possible
 - Do not assume it will only take a few minutes
 - Try not to be rushed as you will miss data
- When is the next trauma registry training offered?
 - I am not sure when the next Trauma One training will be offered that will come from AZ BEMS.
- Injury and diagnostic coding: What are people doing when very injured patients are quickly transferred with little time for work up (which is what finds the injuries) to capture true injury severity.
 - In a perfect world you are getting the information from the facility you sent the patient to.
 - Autopsy is reports are the final word on injuries.



Garbage In- Garbage Out!

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Trauma Registry

- Disease specific data collection that describes the injury event, demographics, prehospital information, diagnosis, outcome and cost.
- It is imperative that the data populating the registry be as accurate, valid and reliable as possible.
- The history of your trauma center
- It is not just a requirement it is a tool for assessing the effectiveness of your trauma care system

Trauma Registrars

- Common problems with registrars not registries
- Inconsistencies amongst abstractors in multiple facets of the registry
- Improper training
- Not given the correct tools for success
- No internal validation

Data Validity

- Definition: Valid information
- Trusting your data
- Data cleaning can consume 80 percent of a researchers time ensuring the internal consistency, identifying outliers and missing data.
- Valid questions can be answered with reliable data

Data Reliability

- Definition: Measure of consistency
- Reliability of data is not enough

Some Tools for Success

- Invest in your registrars
- Software trainings
- Reports
- Chalkboards
- IRR
- TRR
- Data Dictionary
- TRUG
- DocMatter

References

- Laymen, E., Watzlaf, V., & Andrew, B. (2009). Data Information. In *Health Informatics Research Methods: Principles and Practice*. Chicago, IL: American Health Information Management Association.

Thank You

- Questions?

ICD-9 Codes for Trauma

CNS	ICD-9 Code
Basilar Skull Fracture with, without brain injury	801.xx
Vault Skull fracture with, without brain injury	800.xx
Contusions	851.xx
SDH/EDH/SAH	852.xx
DAI	853.xx
Concussion	850.x
CHI-TBI	854.xx
Cranial Nerves	950 - 951.x
Peripheral Nerves	955 - 957.x
Cord injury without fracture	952 - 954.x

Orthopaedic	ICD-9 Code
Facial Fracture	802.xx
Spinal Fracture	805.x
Spinal Fracture with Cord Injury	806.xx
Rib Fracture	807.x
Pelvic Fracture	808.xx
Clavicle	810.xx
Scapula	811.xx
Humerus	812.xx
Radius/Ulna	813.xx
Carpals	814.xx
Metacarpals	815.xx
Phalanges	816.00
Femur	820.x
Femur Shaft-distal	821.x
Patella	822.x
Tibia/Fibula	823.xx
Malleoli	824.x
Tarsals	825.x
Calcaneus	825.0
Matatarsals	825.25
Phalanges	826.x

Internal Organs	ICD-9 Code
Heart	861.0x
Pneumothorax	860.x
Lung	861.2x
Diaphragm	862.x
Stomach	863.0
Small Intestine	863.2x
Colon	863.4x
Pancreas	863.9x
Liver	864.xx
Spleen	865.xx
Kidney	866.xx
Bladder/Urethra	867.x
Mesentery	968.x9
Adrenals	868.x1

Skin	ICD-9 Code
Lacerations	870 - 894
Amputations UE	885 - 887
Amputations LE	895 - 897
Penis, Vagina, Scrotum	878.xx
Abrasions	910 - 919.x
Contusions	920 - 924.8

Burns	ICD-9 Code
Always - TBSA first	948.xx
By body region	940 - 947.xx

Other	ICD-9 Code
Trachea, Larynx, Thyroid, Pharynx	874.xx

Vascular	ICD-9 Code
Head/neck	900.xx
Thoracic	901.xx
Thoracic Aorta	901.0
Abdominal	902 - 902.4
Abdominal Aorta	902.0
IVC	902.1
Pelvis	902.5x
UE	903.xx
LE	904.xx

Injury E-Codes (ICD-9)

Place of injury	E849.X
Home	0
Farm	1
Mine/Quarry	2
Industrial-Construction (all Work Related locations)	3
Recreation-Sport	4
Street-Highway	5
Public Building	6
Residential Institution	
Acute Care Hospital	7A
Jail/Prison/Correctional Facility	7B
Nursing Home	7C
Psychiatric Facility (in-patient)	7D
Other residential institution not listed	7E
Other Specified	8
Other Not Further Specified	9

Motor Vehicle EXXX.x	E-Code
MVC - NFS	919._
MVC - Collision	912._
MVC - Bike	813.6
MVC - Pedestrian	814.7
MVC - Loss of control	816._
MVC - Object - off road, non traffic	823._
MVC - Into Deer/Moose (ect), guardrail	815._
Off-road vheicle (ATV...)	821.2
Snowmobile	820.2
Carsurfing	818.1
General Bike	826.1
Riding Horse	828.2
Horse-buggy	827.3
Windsurfing	835.4
Fall out of moving vehicle	818._

Burns	E-Code
Hot liquid, substance-coffee	924
Hot tap water	924.2
Conflagration - house	890._
Jump burning building	890.8
Clothing on Fire	893._
Bed on Fire	898
Ignition of Flammable material (gas-O2)	894
Fireworks	923
Acid	924.1
Steam/hot object	924.8
Poisonings	850.858

Motor Vehicle X.x	E-Code
Driver	x.0
Passenger	x.1
MC Driver	x.2
MC Passenger	x.3
Streetcar	x.4
Occupant Animal Drawn Vehicle	x.5
Pedal Cyclist (Bike)	x.6
Pedestrian (includes all wheel chair types)	x.7
Other Specified Person	x.8
Unspecified Person	x.9

Suicide	E-Code
Stab/Cut with sharp obj	956
GSW Hanging	955._
CO Poisoning	953
Jumping	952._
MVC	958.5

Injury E-Codes (ICD-9)

Falls	E-Code
Fall down embankment, out of tree	884.9
Fall off roof, building	882
Fall off ladder	881
Fall - GLF	888.8
Fall - GLF Strike obj, blunt	888.1
Fall down stairs	880.9
Fall - NFS	888.9
Fall - Slip/Trip	885.9
Fall in sports - collision/tackle	886
Diving into pool	883
Fall out of Chair	884.2
Playground	884
Fall out of Bed	84.4
Fall off Skateboard	885.2
Fall off Snowboard	885.4
Skiing	885.3
Fall off Scaffold	881.1

Homicide	E-Code
Assault with Fists	960.0
Assault with blunt object	968.2
Stab	966
GSW	965._
GSW - Not further specified	965.4
Rape	960.1
Child Abuse	967._
Abuse by Father, Stepfather, or Boyfriend	967.0
Battering and Maltreatment by Person, Not Elsewhere classified	967.1
Abuse by Mother, Stepmother or Girlfriend	967.2
Battering and Maltreatment by Spouse or Partner	967.3
Battering and Maltreatment by Child	967.4
Battering and Maltreatment by Sibling	967.5
Battering and Maltreatment by Grandparent	967.6
Battering and Maltreatment by Other Relative	967.7
Battering and Maltreatment by Non-Related Caregiver	967.8
Battering and Maltreatment by Person, Not Otherwise Specified	967.9

Other	E-Code
Struck in Sports - no fall	917
Injury NFS	928.9
Kicked by animal	906.8
Venomous Snakebite	905.0
Dog Bite	906.0
Power Lawn Mower	920.0
GSW-Unintentional	922._
Sharp implement-unintentional	920._
Tornado	908.1
Tsunami	909.4
Struck by falling object	916
Cut by glass	920.8
Hypothermia - exposure	901.0