MAIS 3+

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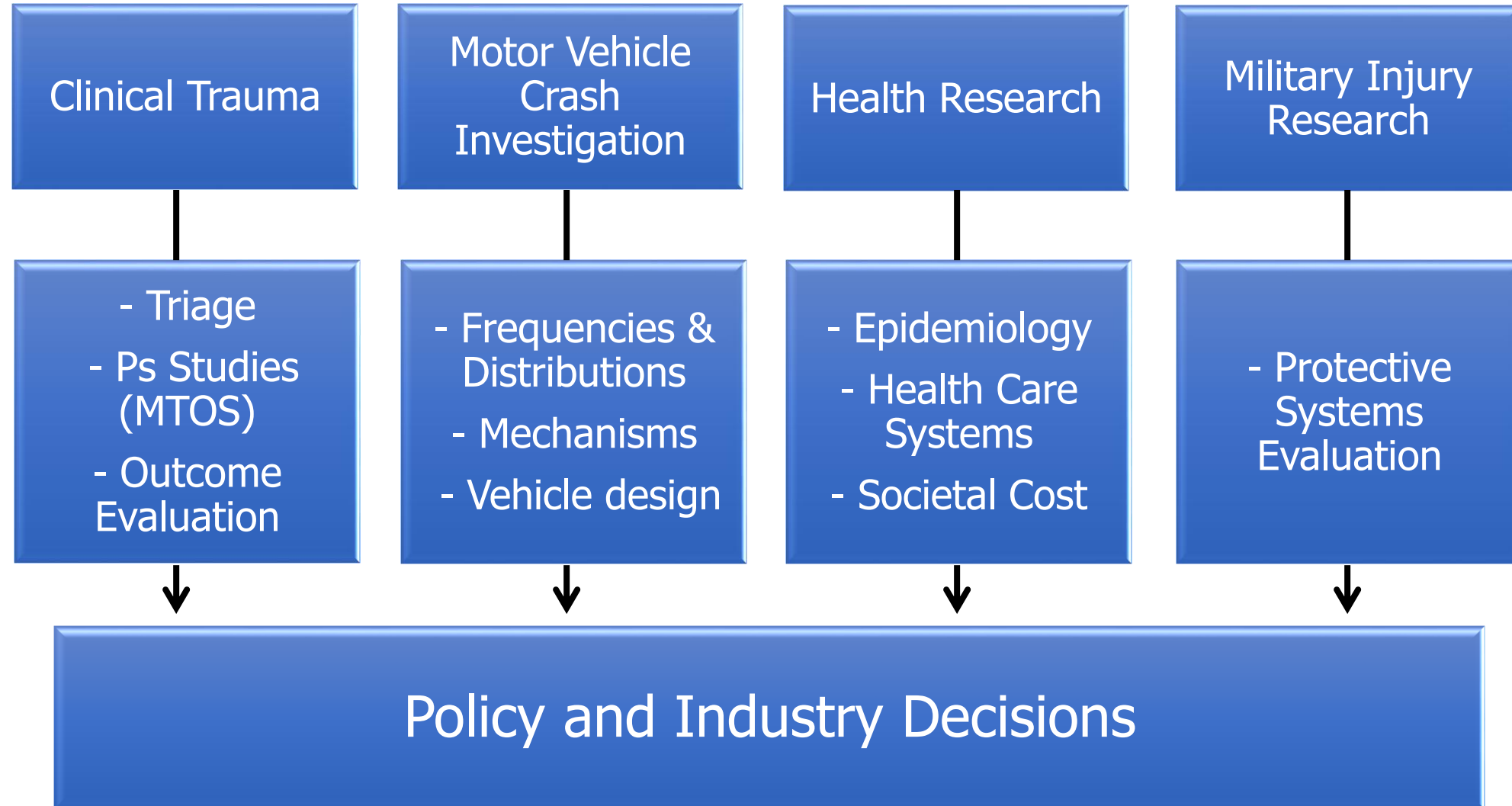
AIS

ABBREVIATED INJURY SCALE

Association for the Advancement of Automotive Medicine

AIS Concepts and Purpose

- Rank injury by severity relative to importance to whole body
  - Severity unaffected by time, consequences or outcome
- Standardize terminology
- Usable for multiple injury causes
- Describe injury anatomically
- More than a threat to life scale

AIS Definition

- An anatomically-based, consensus-derived, global severity scoring system that classifies each injury by body region according to its relative importance on a 6-point ordinal scale.

AIS Definition

- **AIS Descriptors identify damage to the anatomic structure from the transfer of energy and NOT physiologic response.**
  - **Example: Cerebral Contusion, Liver Laceration, Femur Fracture**

Sochor & Heltzel, 2015

Advantages of Anatomical Scale

- **Clinical training is not necessary**
  - Anatomic measurements are not variable as are physiological measurements which can be affected by:
    - *Time from injury to treatment*
    - *Pre-hospital care*
    - *Presence of alcohol/other drugs*
    - *Patient's age, ability to compensate for massive volume losses*

AIS Definition

- **Ordinal Scale**:

1	Minor
2	Moderate
3	Serious
4	Severe
5	Critical
6	**Maximal**

AIS Post-Dot "9" Injuries

- Definition = no severity can be determined because of inadequate information or documentatoin
  - Examples: Closed head injury (100099.9)
                 Blunt thoracic injury (400099.9)
- Useful for recording the frequency of injury
- Cannot use post-dot "9" in an ISS calculation
  - Incomplete and possibly inaccurate

Unique Numerical Identifier

Example – Femur fracture, NFS = **853000.3**

Pre-dot code = 853000	
8	Body Region *(AIS chapter)*
5	Structure type *(Skeletal)*
30	Specific structure *(Femur)*
00	Level of injury *(NFS = Not further specified)*
3	Severity number *(3 = serious)*

Multiple Injuries

- AIS = severity of a single injury

- *MAIS = highest AIS severity for a patient with multiple injuries*

- *ISS = sum of the squares of the highest AIS severity in each of the three most severely injured, separate ISS body regions*

AIS3+ Potential Challenges

- ICD modifiers are different for each country or region and that may be where the conversion table is a challenge

- Data may not be robust such as police data and an incomplete hospital record

- Payment schemes – some health systems are not providing appropriate injury ICD codes due to coding guidelines for reimbursement

Data Examples

NUM_PAC	EPI_DIAG	EPI_TRAUMA	EPI_AIS
8	E11.9/I10/J44.9/T14.8/V89.2XXA/Z79.4/Z79.82 Person injured in unspecified motor-vehicle accident, traffic	**T14.8** **Other injury of unspecified body region** Abrasion NOS, Contusion NOS, Crush injury NOS, Fracture NOS, Skin injury NOS, Vascular Injury NOS, Wound NOS	9
60	T07/V87.9XXA Person injured in other specified (collision)(noncollision) transport accident involving nonmotor vehicle(traffic)	**T07** **Unspecified multiple injuries**	9

Data Examples

NUM_PAC	EPI_DIAG	EPI_TRAUMA	EPI_AIS
2630	S02.31XA/S80.811A/T14.8	**S02.31XA = FX orbital floor left** **S80.811A = Abrasion Right Lower Leg** **T14.8 – Other injury unspecified body region**	0/0/9
19553	S22.41XA/S37.812A/S39.91XA/S42.114A	**S22.41XA = Multiple Rib fxs, right** **S37.812A = Contusion Adrenal Gland** **S39.91XA = Unspec Inj Abd** **S42.114A = NonDisp fx body scapula, right**	0/0/9/0
32398	A40.0/B95.61/F10.21/H05.012/S02.2XXA/S09.90XA/S92.411A/V19.9XXA/W19.XXA/Y93.55/Z16.11	**S02.2XXA = Fx Nasal Bone** **S09.90XA = Unspecified injury Head** **S92.411A = Disp Fx Prox Phalanx R Great Toe**	0/9/0

Thank You!

For MAIS3+ coding questions, please send an email to:

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