Seeking Professional Opinion: Charting the Course to Deliver AACN Education to EMS Medical Directors

A project of NHTSA's
Office of Emergency Medical Services (OEMS)

The Team

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- **Paul Stiegler, M.D., FACEP**, Lead Subject Matter Expert; medical director of the Dane County (Wis.) Public Safety Communications Center
- **Robert R. Bass, M.D., FACEP**, Subject Matter Expert; executive director of the Maryland Institute for Emergency Medical Services Systems (MIEMSS) and member of the CDC Expert Panels on FTT and Advanced Automatic Collision Notification
- **Jake Knight**, Project Lead; partner with the RedFlash Group
- **Tricia Duva**, Project Manager; account manager with the RedFlash Group

About the Project

- Funded by the NHTSA Office of Emergency Medical Services
- Two-year project to develop an outline of the content and other recommendations for a course targeted to EMS medical directors on AACN
- The course will educate medical directors on AACN and how to implement
- Final deliverables (course outline and recommendations) due in October 2013
- The course will be developed after 2013 and may be expanded to target other stakeholders
- We are here today to seek your input

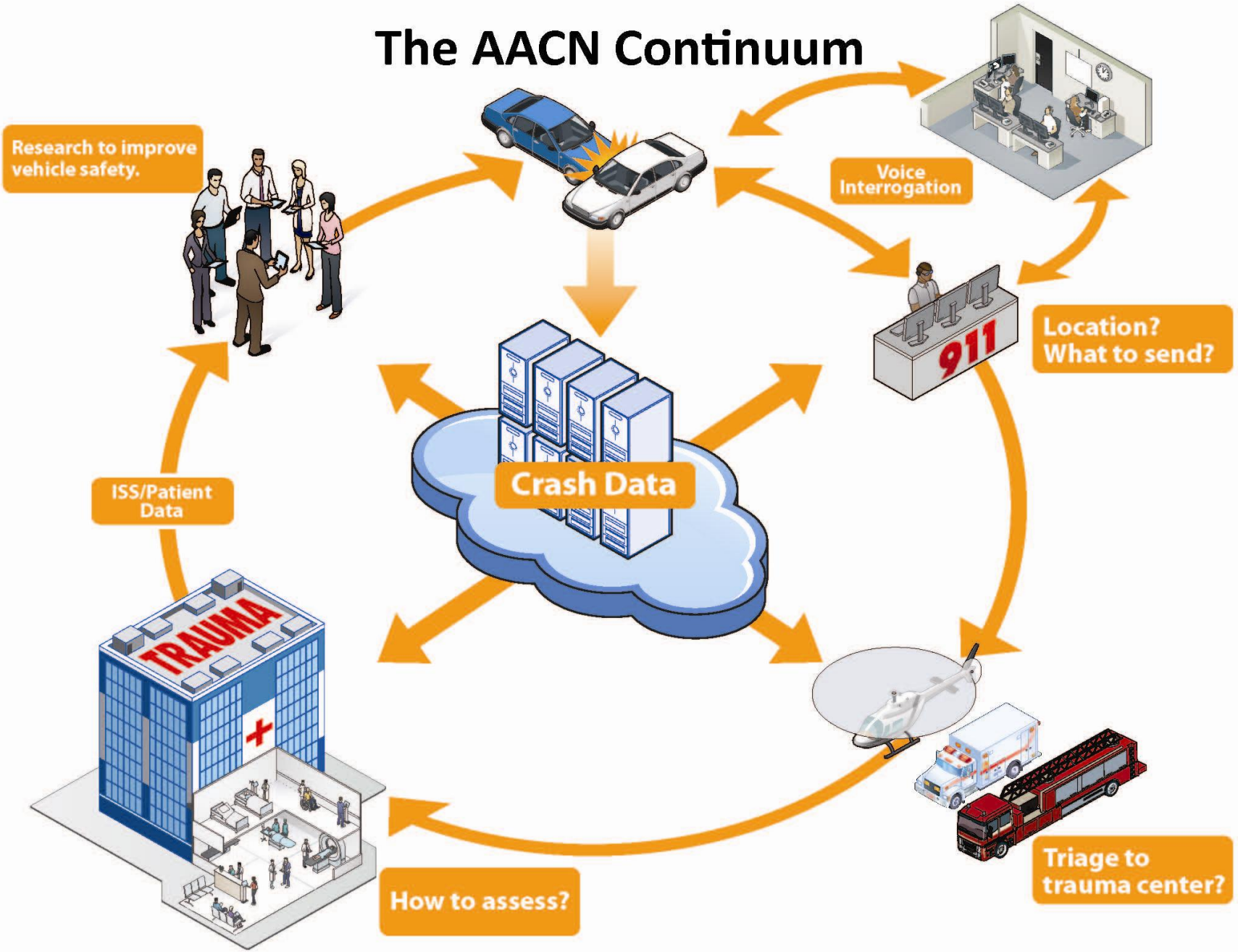
What is Advanced Automatic Collision Notification (AACN)?

- Vehicle telematics systems have evolved over the past several decades
  - Combine and integrate cellular phone technology, GPS location, and data from sensors in the vehicle.
- Early pilots of ACN utilized air bag deployment to identify “serious” crashes.
- As technology advanced, more data became available including delta V, principal direction of force, seatbelt usage, multiple impacts, and vehicle type
- These additional data enable a more accurate prediction of the likelihood of serious injury

Why Should You Care?

- AACN is here (6-7 million cars on the road already) and will continue to expand with growing public expectations
- Vehicles with embedded telematics today:
  - OnStar: GM
  - Agero: Toyota, BMW, Hyundai, Infiniti, Lexus, Rolls Royce, Mercedes
  - 911 Assist: Ford (Bluetooth technology, not telematics)
- This is increasingly impacting EMS systems and, therefore, state EMS offices
- Your feedback is critical to the development of an educational program that will inform medical directors about AACN

The AACN Continuum



Course Elements

1. Introduction to Advanced Automatic Collision Notification (AACN)
2. The Science Behind AACN and Injury Predictive Algorithms
3. The Role of AACN in Field Trauma Triage (FTT)
4. Implementation of AACN

Section 1: Introduction to Advanced Automatic Collision Notification (AACN)

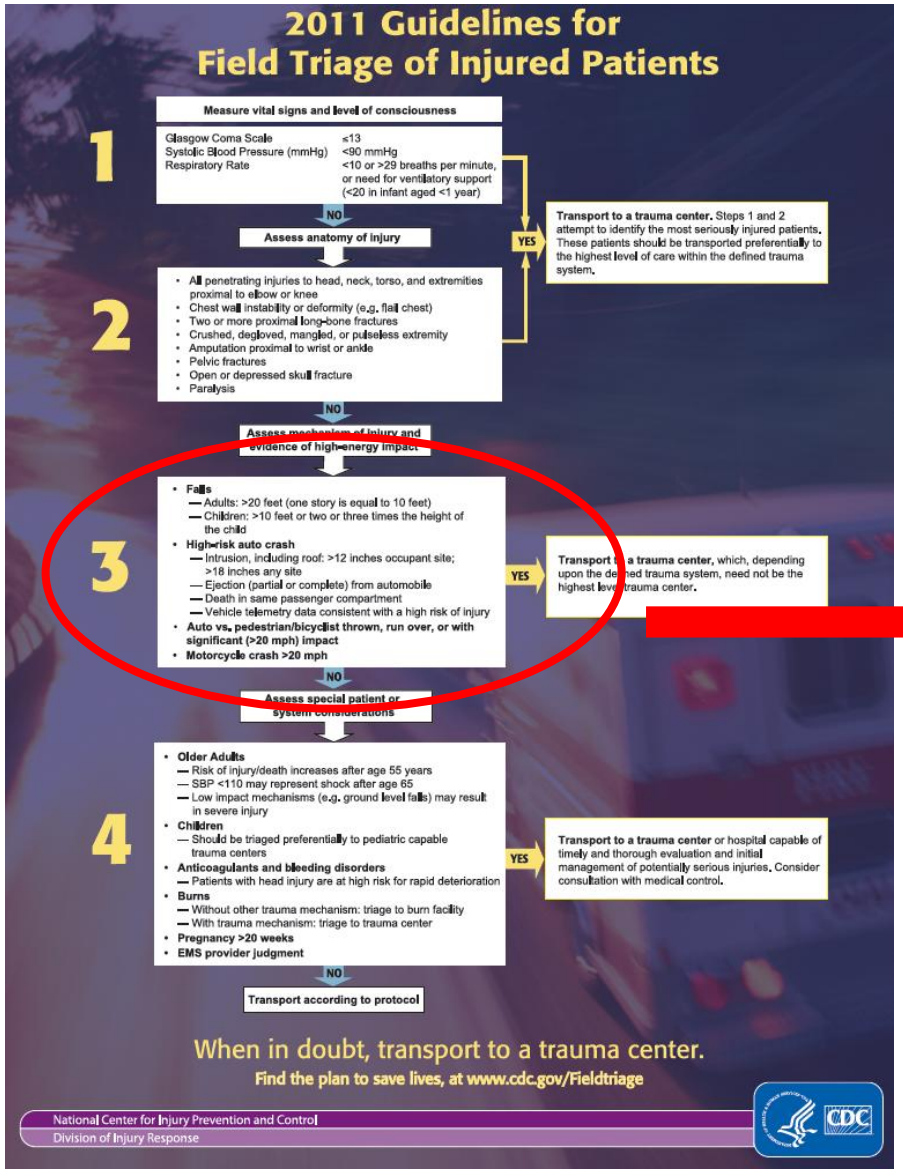
- Early ACN pilots and the evolution to AACN as vehicle telematics systems added more information
- AACN telematics providers today – OnStar and Agero
- AACN can provide an accurate location of the crash and has the ability to predict injuries with better accuracy
- Many benefits:
  - Quicker dispatch, better allocation of resources, precise location
  - Improved accuracy of field trauma triage
  - Used to grade the level of assessment at the trauma center
  - Improved crash reconstruction => safer vehicles and better data
  - Potential to improve patient outcomes and reduce costs

Section 2: The Science Behind AACN and Injury Predictive Algorithms

- Early ACN pilots – location and airbag deployment only
- AACN (2004) – adds more data: DOF, Delta V, rollover, multiple collisions, and more
- Accuracy and limitations of AACN data in predicting severity of injury (urgency algorithm)
- Ongoing research

Section 3: The Role of AACN in Field Trauma Triage (FTT)

- Field Trauma Triage Guidelines:
  - ACS-COT developed in 1986 with periodic updates since
  - CDC convened National Expert Panel in 2005 with support from NHTSA
- FTT guidelines include a decision scheme that is a four-step process that evaluates: 1) physiology; 2) anatomic injuries; 3) mechanism; and 4) special considerations
- Steps 3 and 4 improve sensitivity of the algorithm, but produce much more over-triage ("over-triage to avoid under-triage")
- The FTT Expert Panel focused on improving the accuracy of the guidelines, particularly with "mechanisms"
- Multiple studies suggest the use of AACN data is more accurate in predicting the likelihood of serious injury than traditional indicators such as "high speed crash," "major auto deformity," and "extrication time > 20 minutes," etc., which were removed



Current Step 3 Mechanisms

- **Falls**
  - — Adults: >20 feet (one story is equal to 10 feet)
  - — Children: >10 feet or two or three times the height of the child
- **High-risk auto crash**
  - — Intrusion, including roof: >12 inches occupant site; >18 inches any site
  - — Ejection (partial or complete) from automobile
  - — Death in same passenger compartment
  - — Vehicle telemetry data consistent with a high risk of injury
- **Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact**
- **Motorcycle crash >20 mph**

Seriously injured patients treated at a trauma center have a 25% reduction in mortality
MacKenzie, et al, *NEJM*, 2006

Section 4: Implementation of AACN

- Local
  - Must be collaborative effort – must identify key stakeholders
  - Educate on the benefits, added safety, improved efficiency and outcomes
  - Identify barriers and work to mitigate
- Local and national
  - Need for data standards and SOPs for the TSP/911 interface and dispatch

RECOMMENDATIONS FROM THE EXPERT PANEL:

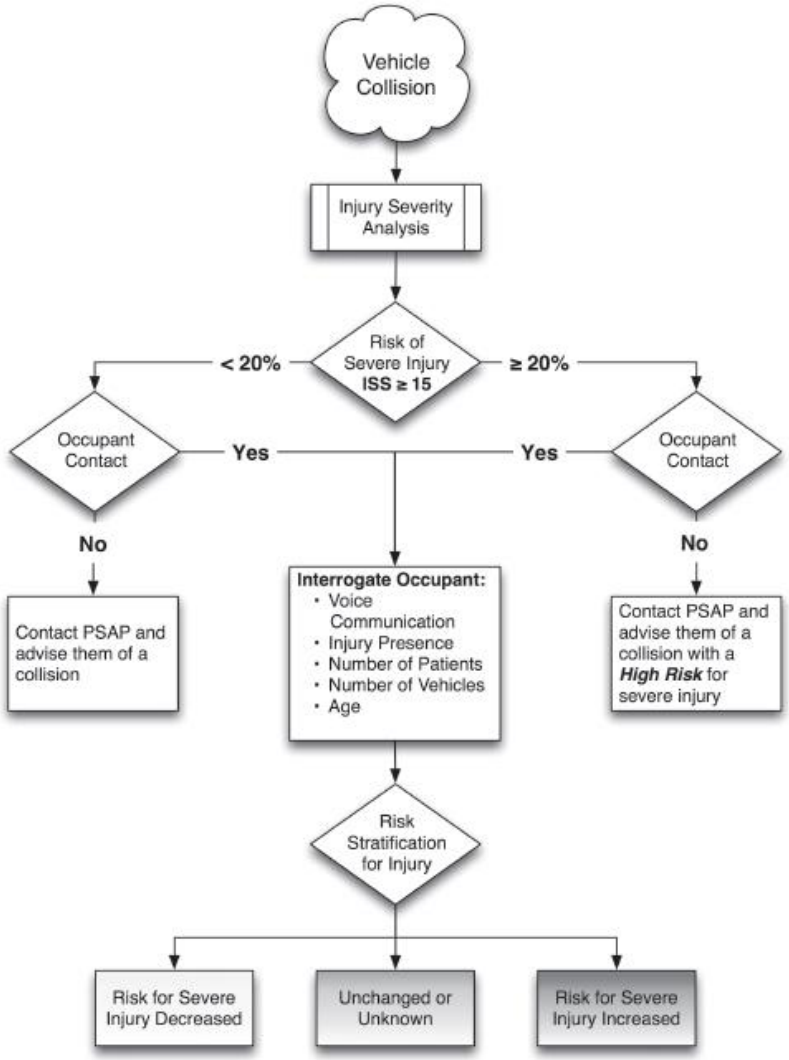
ADVANCED AUTOMATIC COLLISION NOTIFICATION AND TRIAGE OF THE INJURED PATIENT

—PREPARED BY THE—
CENTERS FOR DISEASE CONTROL AND PREVENTION,
NATIONAL CENTER FOR INJURY PREVENTION AND CONTROL, DIVISION OF INJURY RESPONSE

—WITH SUPPORT FROM—
ONSTAR, THE GENERAL MOTORS FOUNDATION, AND THE CDC FOUNDATION

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention

ADVANCED AUTOMATIC COLLISION NOTIFICATION PROTOCOL



Course Structure Considerations

- 4 course sections
- 15 minutes each
- CE/Test
- Online
- In person/online
- Highly interactive and engaging
- Multimedia
- Speaker’s Guide/Toolkit

Q & A

Contact Info

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Course content suggestions:

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