21st Century
Incident Management Communications
Systems:
“Brick” to the Tricorder & FirstNet!

Kevin McGinnis, MPS, Paramedic
Board Member: First Responder Network Authority (FirstNet)

Communications Technology Advisor
National Association of State EMS Officials
National Association of EMS Physicians
National Association of EMTs
National Association of EMS Educators
National EMS Management Association
Pre-1970 to 2014
EMS Frequencies

- **VHF** – 155.xxx MHz
  - 155.340/155.175 (ambulance to hospital)
  - 155.280 (hospital to hospital)

- **UHF** – 463.xxx/468.xxx MHz
  - (10 “MED Channels”)
  - Frequency Coordination
  - Voice Communications
  - Biotelemetry

- **Telephone**
- **700/800 MHz**
EMS Needs Improved Communications Technology

Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities

Report to Congress
February 4, 2008
EMS Information Needs

“I wonder….”  Situational Awareness

“We wonder…”  Common Operating Picture

Sequential Processing  Parallel Processing

Inability to Adopt Available Diagnostic Applications
THE GOLDEN HOUR - Time Dependent Life Threatening Conditions

≠ 20+30+50+40 Minutes

Trauma, Heart Attack, Stroke.....

© First Responder Network Authority
2 Patients/45MPH

1001 Hendrix Highway (Nash/Oak Sts.)
   Toyota Prius/Object/Head On
   ++Airbags ++Belts
   ++Severity

MVC
EMS INFORMATION NEEDS

Injury Severity Predictor Allows Early Launch of Resources
2 Patients/45MPH/Front Seats
2004 Toyota Prius Head On/Object
++ Doors ++ Patients (Driver Priority)
MERCY HOSP.
UNITED AMB.
DOTREMS
Ridgeway EMS 1

Parallel Processing

LIFE FLIGHT
ETA: 12 Min’s.

JONES MEM. HOSP. (DIVERT)
CARDIAC

VERNON FD VOLUNTEER AMBULANCE

RIDGEWAY EMS
ED On Alert for Pt: +

RIDGEWAY FD
EXTRICATION/HAZ MAT

RIDGEWAY HOSP.

MVC

ED On Alert for Pt: +

CITY FIRE/RESCUE
CITY TRAUMA CTR.

NEW SHARON FD
1ST RESPONDERS

ROAD CLEARANCE
Lights + /Cars ++

ETA: 10 Min’s.

Ames St. to Clark St. to Old Highway (E); 15.2 Mi.s;
#3945 Old Highway

Team On Alert for Pt:+

MVC
FirstNet devices will improve accident triage and enable parallel processing.
Other Technologies
- Two Way Telemedicine (Virtual MD/Community Paramedicine)
- Portable Ultra Sound (Video & Images)
Other Technologies

- Multiple Patient Monitoring (Mass Casualty Incident)
- Multiple Responder VS Monitoring
Drones
VHF/UHF

Won’t Cut It:

- Current: < 9.6+ kbps
  - Early Dial-Up: 14.4 kbps
  - Current Dial-Up: 56 kbps
  - V.S. Transmission: 76+ kbps
  - Basic video (300-700 kbps)
  - Ultrasound???
Beginning in 2006, the public safety community fought hard to convince Congress that it needed a dedicated, reliable and interoperable network to provide advanced data communications capabilities nationwide ...fulfilling the last remaining recommendation of the 9/11 Commission.
FirstNet will be the first high-speed, broadband and data network dedicated to public safety.
Implementing the Vision

THE LAW
2.22.12
FirstNet becomes law
PL 112-96

FUNDING
$7B authorized to build the FirstNet network. Funded by spectrum auctions through 2022.

GOVERNANCE
The FirstNet Board has 15 members, including those with telecommunications and public safety backgrounds.

Each Governor appoints 1 Single Point of Contact (SPOC) and governing body to represent the State’s interests to FirstNet.

40 member Public Safety Advisory Committee (PSAC) advises FirstNet on public safety intergovernmental matters.

BAND CLASS (BC) 14
20MHz of bandwidth has been dedicated to public safety in the prime upper 700MHz frequency range.

July 28-30, 2015
FirstNet “3-in-1” Nationwide Network Concept
Get Involved

- Twitter @firstnetgov
- LinkedIn
- YouTube (FirstNetGov)
- Flickr (FirstNetGov)

SPOC: www.firstnet.gov/consultation
PSAC: www.firstnet.gov/about/public-safety-advisory-committee

www.firstnet.gov
- Fact Sheets
- Blogs
- Presentations
- Upcoming speaking engagements and current events
- Board meeting materials and webcast

Visit Website

- RFI
- Public Comment
- Consultation
- Environmental and Historic/Cultural Topics (PEIScomments@firstnet.gov)

February 27, 2015
Thank You!

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