Amateur Radio Support for Healthcare

Santa Clara County ARES/RACES

Michael Fox, N6MEF, RACES Chief Radio Officer

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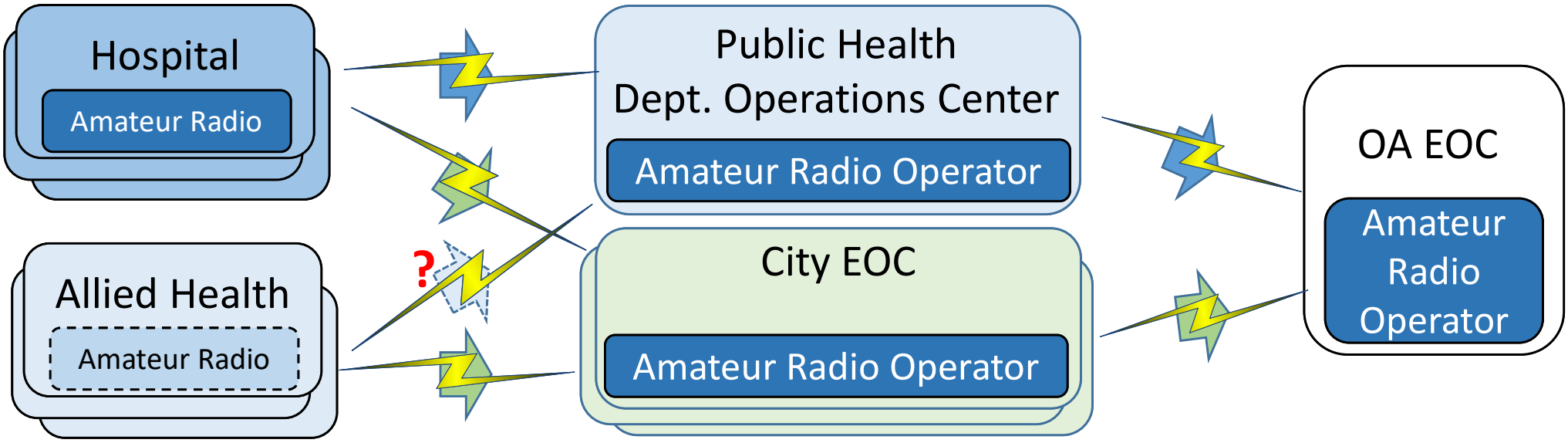
Multiple Roles for Amateur Radio

- Amateur radio supports many activities and locations during communications emergencies:
  - Emergency/Department Operations Centers
  - Neighborhood command posts, schools, shelters, hospitals, fire stations, points of distribution, …
- For a more general presentation, see:
  - "Amateur Radio for Emergency Managers" at https://www.scc-ares-races.org/services/emcomm/eoc
- Today's focus: healthcare

Healthcare Communications Flow

- Medical info is reported to PHDOC; municipal issues are reported to the city EOC; OA EOC supports both
  - Bed status, facility status, resource requests, municipal issues
- Amateur Radio:
  - Hospital to (PHDOC or City EOC) to OA EOC
  - Support for Allied Health facilities is new, workflows developing



Current Projects - Healthcare

- High-speed network connectivity
- Hospital equipment survey & recommendations
- Healthcare forms for radio transmission
- Credentialing for healthcare
- Allied health outreach & initial connectivity

High Speed Connectivity

OES Weekly Report – March 6, 2018

Santa Clara County ARES/RACES Expands Emergency Communications Data Network

By Michal Fox, Santa Clara County ARES/RACES

Santa Clara County ARES/RACES operates a county-wide data network which provides essential backup connectivity in the event of a failure of other voice and data networks. The network has been running since 2009 without a single service outage and has been used to provide data communication when commercial network service was disrupted.

Working closely with the Santa Clara County Office of Emergency Management and Santa Clara County Communications, the team recently completed the installation of a new microwave link to the northern hub of the network, located at Channing House in Palo Alto. The Channing House facilities team has also been helpful in providing access and support for the installation and ongoing operations of the network. This link provides redundancy and increased network capacity to the northern part of the county.

The ARES/RACES team is now adding high-speed connections to city EOCs, hospitals, and other key sites. To find out more about the ARES/RACES data network, see: https://www.scc-ares-races.org/data.

High Speed Connectivity (2)

- County-wide amateur radio data network since 2009
  - Low speed, countywide coverage; independent of Internet
  - Four separate Internet gateways (when Internet is available)
  - No service outage since 2009
  - Operated during Loma Fire when commercial carriers didn't!
  - For more info: https://www.scc-ares-races.org/data
- All EOCs & hospitals are equipped (to varying degrees)
- Last few years: upgrade to high-speed backbone
  - Redundant links, redundant sites
  - No single link or site failure breaks backbone connectivity

High Speed Connectivity (3)

- Now: adding high-speed access to EOCs, hospitals
- Services available:
  - Packet radio
    - Higher speed access to existing data service (like plain-text email)
  - Countywide e-mail
    - Four redundant, internal e-mail servers (compatible with standard e-mail)
    - Can operate independent of Internet if needed
    - Four separate e-mail gateways to Internet (when Internet is available)
  - Countywide Intranet
    - Share files, images, between hospitals, MHJOC, EOCs, …
  - Internet connectivity
    - Four separate Internet connections
- Important: By law, we can't/don't compete with commercial providers of these services
  - Use for backup during communications emergencies
- Next step: determine individual site needs …

Hospital Equipment Surveys

- Outcome of 2018 Statewide Medical Health Exercise
  - Amateur radio equipment readiness varies by hospital
  - Some existing equipment needs to be replaced
  - Most hospitals missing some essential functionality
- Created Hospital Command Center recommendations
  - General radio capability recommendations:
    - https://www.scc-ares-races.org/operations/hcc-nets.html
  - General equipment recommendations:
    - https://www.scc-ares-races.org/operations/hcc-equip.html
- Action Item in Improvement Plan
  - Survey and prepare an equipment plan for each hospital

Hospital Equipment Surveys (2)

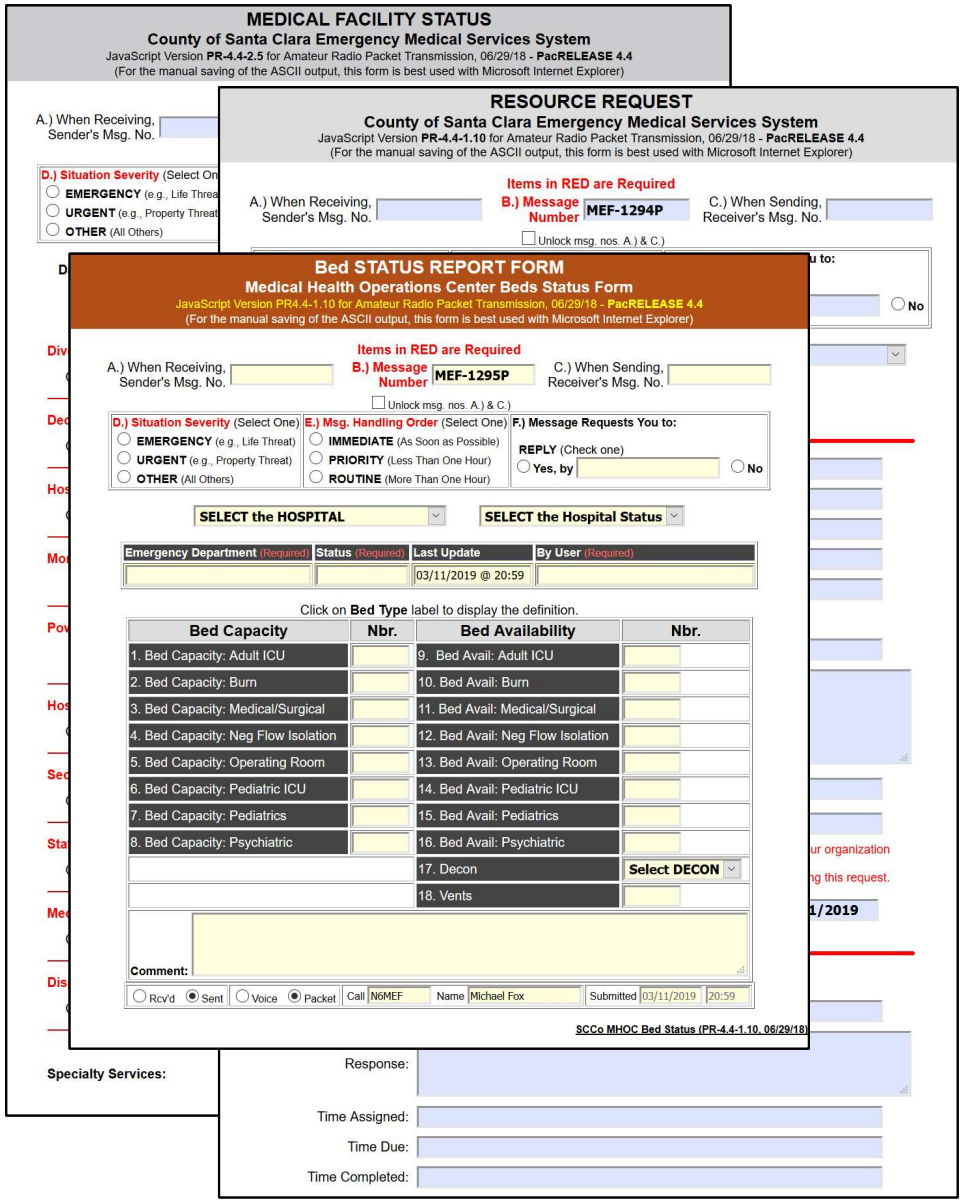
- Survey Status
  - Evaluating high-speed radio line of sight paths
    - Signal strength, antenna recommendations, …

Example:
Line of sight radio path
between Valley Medical
and San Jose hub

  - Started individual hospital surveys
    - Survey existing equipment; identify gaps; list recommendations
    - So far: Valley Medical, O'Connor, St. Louis
  - Target date to complete all hospitals: June, 2019

Healthcare Forms

- Complex healthcare status forms can be sent via low-speed VHF radio when necessary
  - Used during 2018 Statewide Medical Health Exercise
- Currently updating these forms for better alignment with look and feel of forms in WebEOC, EMResource



Credentialing for Healthcare

- Outcome of 2018 Statewide Medical Health Exercise
  - Amateur radio operator readiness varies by hospital
  - Need standard for more consistent capability
- Action Item
  - Leverage existing county Mutual Aid Communicator credentialing program
    - Started in 2009; highly successful; copied by many
    - Updating program to cover more than mutual aid situations
    - Healthcare agencies will be able to request credentialed operators at the city level
  - Currently investigating healthcare-specific requirements
    - Security, training, …
  - Target: Summer 2019

Allied Health Outreach

- New, developing …
- Working on definition of info/work flow via amateur radio
- Prepared very basic equipment recommendations
  - https://www.scc-ares-races.org/operations/allied-health-equip.html
  - In most cases, an antenna on the roof is a great start
- Healthcare-specific licensing classes held
  - https://www.scc-ares-races.org/training.html#license
- Summary email with links to local city amateur radio leaders
  - https://www.scc-ares-races.org/cities.html
- Some outreach has begun; some meetings held
- If you're ready to get started, don't wait. Give your local amateur radio leader a call!

Summary

- Major focus this year on improving amateur radio preparedness at healthcare facilities
  - Network capacity
  - Hospital equipment
  - Forms processing
  - Operator capability
  - Outreach to / integration with allied health agencies
- For more info:
  - https://www.scc-ares-races.org
- For a copy of this presentation:
  - https://www.scc-ares-races.org/services/emcomm/healthcare