

Rochester/Monroe County 911 System

Using Technology to Manage Resources and Enhance Responder Safety

Presentation to the EMS Subcommittee of the
TRB Ambulance Transport Safety Summit
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Rochester/Monroe County 911

- Monroe County population 732,000
- 1.2 Million 911 Calls in 2008
 - 87% Police
 - 8% Emergency Medical Service 100,000+
 - 5% Fire Service



Prior to using MPDS EMD

- All calls for EMS were coded as EMSA (EMS, priority 1) and all were dispatched
- Advanced Life Support Dispatch (paramedic) was at the 911 dispatcher's discretion based on the remarks provided by the 911 telecommunicator and a cheat sheet guideline at the console
- No instructions to callers, address info obtained and immediate disconnect



Prior to using MPDS EMD

- No formalized training or call performance review
- No feedback to employees on accuracy (or not!)
- No patient care instructions to caller
- No formal medical oversight



Instructions to Callers

- CPR/AED use
- Childbirth (approaching 100th phone delivery)
- Choking (Heimlich)
- Bleeding control
- Scene Safety Instructions
- Aspirin administration to patients with chest pain
- Encouraging use of inhalers in respiratory emergencies, epipens for anaphylaxis



Emergency Medical Dispatch

- Four systems available in the US
 - Medical Priority Dispatch (in use in MC)
 - APCO
 - Powerphone
 - Free download available at the NHTSA website
 - 3 of systems meet or exceed ASTM standards for Emergency Medical Dispatch (copies available)



EMD Program

- All 911 operators receive 24 hours of instruction specific to use of MPDS EMD program
- Medical Director oversight and prioritization of resources
- 2 Quality Improvement Coordinators
 - Certified Instructors EMD program
 - Certified QI Reviewers. Accredited Center of Excellence requires review of 3% of EMS calls, plus any reviews requested by user agency, MD, or employee.



EMD Statistics based on Quality Improvement Review

- Omega responses .34% no response
- Alpha responses 30% cold response
- Bravo responses 17% hot bls response
- Charlie responses 22% hot als response
- Delta responses 28% hot als response
- Echo responses 2.4% y'all come



Regional Customization

- Each EMD code is assigned a priority by the 911 Medical Director which aligns dispatch with the system guidelines
- For example, a 10A1 (chest pain, breathing normally less than 35 yrs) is an MPDS cold BLS response recommendation. In the Monroe County System it is a paramedic response, or priority 2 since chest pain patients get 12/16 lead EKG evaluation



Flu Protocol

- Available as a free download from <http://www.emergencydispatch.org/>
- Integral part of the Pandemic flu plan for Monroe County
- Four Stage plan with recommendations for changes in first response and dispatch protocols depending on the current situation



36 PANDEMIC / EPIDEMIC / OUTBREAK (OFFICIALLY ENACTED THREAT)

KEY QUESTIONS

1. Is s/he **completely alert** (responding appropriately)?
2. **(Difficultly breathing)** Describe to me what her/his breathing is like.
 - (INEFFECTIVE) Did s/he have any flu symptoms prior to this?
 - Yes
 - No
3. Is s/he **changing color**?
 - (Yes) Describe the color change.
 - Does s/he have a fever due to touch in room temperature?
 - Is s/he **coughing** (recent onset)?
 - Does s/he have a sore throat?
 - Does s/he have **body aches**?
 - per Rule 2
 - Does s/he have a **runny or stuffy nose**?
 - Does s/he have **diarrhea**?
 - Is s/he **vomiting**?
 - Is s/he having **chills or sweats**?
 - Does s/he have a **headache**?
 - (Yes & no other flu symptoms) Was there a sudden onset of severe pain?
 - Yes
 - No

POST-DISPATCH INSTRUCTIONS

- (If regular dispatch) I'm sending the paramedics (ambulance) to help you now. **Stay on the line** and I'll tell you exactly what to do next.
- (If reduced/limited dispatch) I'm arranging care for you now. An ambulance (or Care Van) will come to check you **when they are available**. This might take several hours.
- (If quarantine and no dispatch) Because of the extent of the flu epidemic, an ambulance cannot be sent to you. I will connect you to a **flu care specialist** who will advise you on what to do. (Patient medication requested and Alert) Remind her/him to do what her/his doctor has instructed for these situations.
- (If 1 = DELTA) If there is a **defibrillator (AED)** available, send someone to get it **now** in case we need it later.

DLS • Link to **N-1** unless: **INEFFECTIVE BREATHING** and **Not alert** → **ABC-1**

LEVELS	#	DETERMINANT DESCRIPTORS	A	B	C	CODES	LEVEL 1 (A)	LEVEL 2 (B)	LEVEL 3 (C)
D	1	INEFFECTIVE BREATHING with flu symptoms				36-D-1			
	2	Not alert with flu symptoms				36-D-2			
	3	DIFFICULTLY SPEAKING BETWEEN BREATHS with flu symptoms				36-D-3			
	4	CHANGING COLOR with flu symptoms				36-D-4			
C	1	Chest pain < 35 with single flu symptom				36-C-1			
	2	Abnormal breathing with single flu symptom or Asthma				36-C-2			
	3	Abnormal breathing with multiple flu symptoms				36-C-3			
A	1	Chest pain < 35 with multiple flu symptoms				36-A-1			
	2	Chest pain < 35 with single flu symptom				36-A-2			
Ω	1	Flu symptoms only (cough, fever, chills or sweats, sore throat, diarrhea, body aches, headache, etc.)				36-Ω-1			
	2	Chest pain < 35 with multiple flu symptoms				36-Ω-2			

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Hyper Reach

- Telephone notification system for up to 10,000 calls per hour in specific geographic location
- Used for incident containment advising residents to stay indoors, away from windows, etc during active events (shootings, fumes leaks, etc.)
- Will be used to in the advent of Pandemic flu system overload
- <http://hyper-reach.com/>



Hyper Reach

- For more information on the H1N1 Hotline or to have it activated for an existing account, please [Contact Us](#).
- The hotline is designed to:
 - Reduce the demands on your PSAP operators from answering routine questions about the flu
- Provide your citizens with up-to-the-minute information on flu status
- Provide your citizens with vaccination locations & schedules
- Provide your health department with demographic reporting about flu symptoms and outbreaks.
- Optionally allow callers to transfer to a call center of your choice
- <http://hyper-reach.com/emergency/index.html>

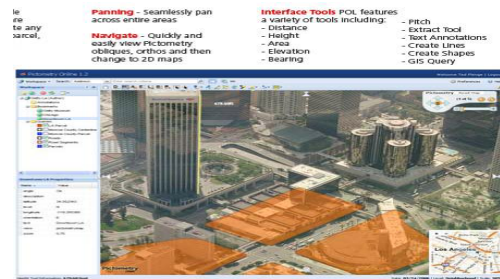


Pictometry (Satellite images)

GPS mapping of call locations by latitude and longitude used when callers are unsure of their location (similar to Google Earth) or when there is a need to visualize an emergency scene (Fires, Police chases, MCI's) Not real time.
<http://www.pictometry.com/home/home.shtml>

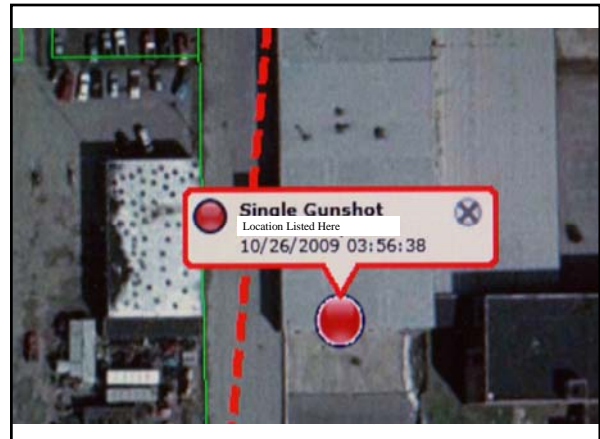


Pictometry Image



Shot Spotter

- Real time audio of gunshot (or sounds resembling gunshots) relayed from speakers located in high crime areas of the city directly to 911.
- 911 operator listens to the sound, visualizes the waveform and enters location and number of shots heard into 911 CAD (Computer Aided Dispatch) system



Shot Spotter

- At times, police have been dispatched to locations when no actual 911 call has been received, and have found victims of shootings.
- EMS is not dispatched until confirmation by 911 call or police on scene of actual injury is received.



CAD Warnings

- Certain addresses entered in the CAD system will trigger warnings to the 911 Telecommunicators to include specific information on events. These include
 - LVAD (Left Ventricular Assist Device) patients
 - Specific AED locations in structures for rapid deployment
 - Special needs patients (vents, Peds)



TCC Warning

```
PRC CAD Administrative Terminal
ln
Premise Information of type TM:
For Location: 321 W MAIN ST, RDC
ENTRY DATE: 02/12/08 BY OPERATOR: 7209 EXPIRES: NEVER
*** RED IS LOCATED AT THE TCC POSITION, MAIN FLOOR ***
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NYS Dept of Transportation Highway Cameras

- Video cameras that are placed on the interstate highways are now live videostream into the 911 Center
- With visualization of accidents, we can enhance or reduce assignments, narrow field of possible locations from the 50 different cell callers reporting various locations that are currently on the phone with us



Next Generation 911

- Text messaging
- Video of events in progress
- We're not there yet! Projected to be 5 years out. Beta tests in progress soon.



Summary

- What we know – we know that the EMD system can be highly accurate in the prediction of low acuity calls (priority 4)
- Shah MN, Bishop P, Lerner EB, Fairbanks RJ, Davis EA. "Validation of using EMS dispatch codes to identify low-acuity patients." Prehospital Emergency Care. 9 (2005): 24
- What we don't know – how accurate our prediction of high acuity calls
- What we need to know – EMD Codes tied to patient outcomes and incorporated in the Electronic Medical Record from 911 to Discharge



Questions??

- Please raise your hand or type in the message box
- Thank you for your kind attention, and for this opportunity to present on behalf of the Rochester/Monroe County 911 Center
- sbeers@monroecounty.gov
- Dedicated to all those EMD's on the front lines (behind the scenes!)

