Criteria Based Dispatch: How one System Changed

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Special Thanks to:

Capt. Mark Monfore, MICP AFD
Disclaimer

- I am not a dispatcher
- Never have been a dispatcher
- I am an involved medical director with immense respect for what our first first responders do
Where we were..

- 20+ years using a rigid algorithm based dispatch system to triage calls, provide pre arrival instructions and to deploy emergency resources

- QA: Experienced EMDs struggled to consistently identify cardiac arrest

- Dispatchers had to ask unnecessary questions (e.g. attempting to verify breathing by counting respirations in patients when breathing was absent or ineffective)

- Delays initiating CPR while navigating through the program to reach the emergency pre arrival instructions
What’s the nature of the problem (with dispatch?)

• Lack of flexibility?

• Trouble identifying cardiac arrest?

• Unnecessary questions in (inflexible) algorithms?

• Delays in initiating DA-CPR navigating the program to reach the emergency pre-arrival instructions?
Where we started

• Algorithm based dispatch: ask questions, input data: dispatchers not encouraged to understand what the triage questions mean

• Dispatchers were looking for “Yes”/“No” answers to check a box in the program so the algorithm would generate a response (with no clear understanding of the dispatcher of the acuity of the pt)

• Calls are processed without real ownership of the decision process
Goal of Change

- Immediately rule out cardiac arrest on every call
- Streamline process
- Unimpeded access to emergency instructions (DA-CPR, Choking, Childbirth) when required at any point in the decision process was critical
Evaluation and Transition to CBD

- CBD: working group assembled to consider:
  
  - Would it likely improve and streamline our process?
  
  - Improve cardiac arrest recognition?
  
  - Decrease time to DA-CPR?
  
  - Improve dispatcher ownership and understanding relative to patient acuity?
Evaluation

- Two staff members went to 32 hour course prior to assisting with the evaluation process

- Emergency calls were processed in a controlled setting utilizing both our current system (MPDS) and the CBD system
Findings

• CBD: fluid and simple regarding ruling out cardiac arrest at the outset of every medical call

• CBD: allowed unimpeded access to other emergency instructions (DA-CPR, childbirth, choking, etc)

• The call taking, access to “problem type”, pre arrival instructions: all very easy

• Affordable

• Flexible

• Transition to the new system seemed “do-able” and warranted
“All Call” Interview Screen
New Paradigm

• Talk to the patient directly: any patient reported to be awake in the all call interview is asked to be on the phone so the dispatcher can speak directly to them

• Talking first person was a significant new approach for us as opposed to asking canned scripted questions

• CBD: designed to identify potential compromise in any of the three most critical body systems: neuro, circulatory and respiratory

• CBD based on two dimensions: level of care required (ALS v BLS) and urgency of care
Positive Findings

- Eliminated unnecessary delays in DA-CPR
- Eliminated unnecessary questions
- Allowed for rapid dispatch
- Reduced call processing times
- Empowered dispatchers: dispatcher discretion
- Autonomy for dispatchers
- FLEXIBILITY: WE CAN CHANGE PROTOCOLS
Other positive findings identified with CBD during our trial period included: eliminating unnecessary delays in DA-CPR, eliminating unnecessary questions, allowed for rapid dispatch, reduces call processing ti
Wednesday, 10:20:57

Incident Start: 10:18:43
Incident Duration: 00:02:14

[Chest Pain/Heart Prob-CR/CY]
Code Red/Yellow

1301 E 80th Ave

Dispatch Test

Cross: GREENWOOD ST/HOMER DR

Assigned: M04

Responding:

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Comment</th>
<th>Scene:</th>
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<tbody>
<tr>
<td>10:20:33</td>
<td>[CBD] 50 YOM, CON/BR, ACTIVE CHEST PAIN WITH RADIATION TO R ARM, HX MI 2007</td>
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<tr>
<td>10:19:08</td>
<td>[CBD] IDC: 7M2 selected - Male, age &gt; 40 chief complaint ongoing chest discomfort</td>
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<tr>
<td>10:19:02</td>
<td>[CBD] M 50</td>
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Connected Refresh Timers Started 10:20.1.89
Where we are today

- 5 month implementation phase April 2014
- eCBD interfaced with CAD and working well
- Each dispatcher received 32 hours of instruction on CBD including anatomy and physiology, identifying sick vs non-sick, in-depth instruction on each chief complaint within the CBD program to include emergency instructions
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<thead>
<tr>
<th>COURSES</th>
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<td>EMT - 2013</td>
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<td>EMT - 2012</td>
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<td>EMT - 2011</td>
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<td>Paramedic – 2013</td>
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<td>Paramedic – 2012</td>
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<td>Dispatch</td>
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<td>Decreased LOC</td>
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<td>Pediatric Emergencies</td>
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<td>Infectious Disease EMD</td>
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<td>EMD SICK/NOT SICK</td>
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<td>Anatomy and Physiology</td>
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<td>Overdose and Poisoning</td>
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<td>Diabetes</td>
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<td>Seizure/Altered LOC</td>
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<td>Dispatch Stroke (NW Stroke)</td>
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<td>Shock</td>
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<td>Respiratory Emergencies</td>
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<td>Trauma - 2011</td>
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<td>EMD-2012-Bleeding-Non-Trauma</td>
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<td>EMD-2012-Obstetrics-and-Gynecology</td>
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<td>EMD-2013-ChestPain</td>
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<th>US &amp; WORLD EMS NEWS</th>
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<td>Emergency Medical Services</td>
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<tr>
<td>Register Investigation: Branstad defends</td>
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<td>Des Moines Register.com - Oct 22, 2013</td>
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Iowa's emergency medical services system was the focus of a Register investigation in April. That report showed that Iowa — which does not require
Implementation

- A work group was identified to review AFDs response profiles and transition the responses to the new initial dispatch codes within CBD. Some CBD chief complaints were customized or enhanced at the discretion of our medical director based on our geographical area and demographics needs.

- AFD’s IT staff designed an interface that enabled the electronic CBD program to pass a copy of incident information to our CAD program which reduced redundancy as well as allowed field responders to view the incident data on their apparatus MDC.
Implementation (cont)

- A QA program has been designed and implemented with dispatchers receiving formal feedback on every cardiac arrest call. Feedback includes call processing times, dispatch times, time to first compression, as well as call processing proficiency. Post incident analyses are performed within the dispatch center after each cardiac arrest. Dispatchers also receive regular feedback from random call selection reviews.

- All phases of cardiac arrest dispatch times are being captured and reported to the CARES program.
Quality Measures

- IT staff created interface from CBD to CAD to pass copy of incident info viewable on MDC in real time
- Formal feedback on every cardiac arrest call including dispatch times, time to first compression, processing proficiency
- Audio from the 911 call is imbedded in feedback form
Compliance Goals

- Cardiac recognition: 95%
- DA-CPR: 75%
- Immediate months following: 87% of cardiac arrests recognized, DA-CPR 78.5% in those cases
- 2015: CA recognition >95%, DA-CPR >95%
Cares Data Entry Form

<table>
<thead>
<tr>
<th>Dispatch Preliminary</th>
<th>Anchorage Fire Department</th>
<th>2/15/2015 2:06:50 AM</th>
<th>Cad: 2015231000009818 / RMS: 0004696</th>
<th>Caltraker: Tallman, Don</th>
</tr>
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<tbody>
<tr>
<td>Audio File Available for playback here: Play Audio</td>
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**Was this a cardiac arrest before arrival of EMS?**
- Yes
- No
- Unknown
- N/A

**CPR already in progress?**
- Yes
- No
- Unknown
- N/A

**Did Dispatch recognize need for CPR?**
- Yes
- No
- Unknown
- N/A

**CPR instructions started?**
- Yes
- No
- Unknown
- N/A

**Were compressions started?**
- Yes
- No
- Unknown
- N/A

**Barriers to CPR (Check all that apply):**
- Hang up phone
- Caller left phone
- Language barrier
- Caller refused
- Overly distraught
- Difficult patient access
- Couldn't move patient
- Patient's status changed
- Other (please specify): 

**Cardiac arrest witnessed?**
- Yes
- No
- Unknown
- N/A

**Who initiated CPR?**
- Lay Person
- Lay Person-Family Member
- Medical Person
- 1st Responder
- EMS Personnel
- Unknown
- N/A

**Type of CPR:**
- Compressions Only
- Compressions with Ventilation
- Ventilation Only
- N/A

**Were Agonal Respirations audible?**
- Yes
- No
- Unknown
- N/A
Cares Entry Form

### Dispatch: Patient
- **Demographic**
  - Options: Adult, Child, Infant, Unknown
- **Conscious?**
  - Options: Yes, No, Unknown
- **Breathing Normally?**
  - Options: Yes, No, Unknown

### Dispatch: Time Measures
- **Transfer Call?**
  - Options: Yes, No, Unknown
- **If yes, time elapsed before dispatcher first addressed caller?**
  - Minutes: 0, Seconds: 0
- **Dispatch recognizes need for CPR?**
  - Options: Yes, No, Unknown
- **Dispatcher began instructions?**
  - Options: Yes, No, Unknown
- **Time to first compression?**
  - Options: Yes, No, Unknown

The following sets of times should automatically come from CAD, but can be manually edited if need be. The APD specific times for example. These will feed into Time Spans for performance measures. By default, we will consider the APD Rx time as the start of our durations, unless we have the APD times, and use the given values.

### Dispatch: Comments
- **Coaching or compliments for dispatcher?**

### Other comments?
Rubber Meets the Road

Making their worst day a new day
Criteria Based Dispatch

- Suits our system
- Improved response to high priority life threats
- Rapidly adopted by dispatch
- Empowers dispatch
- Flexibility
Does your Dispatch Method Meet Your Needs?

- Are you setting and meeting standards for recognition and dispatch of high acuity events?
- Are you fully utilizing the skills and experience of your first, first responders?
- Do you have the flexibility to adjust to your environment?