On the many uses of EMS

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Conflicts of interest

I receive no funding and have not conflicts of interest for providing this presentation.

Speaker Background

- Associate Professor of Clinical Emergency Medicine, Keck School of Medicine
- Director, USC Emergency Medical Services Fellowship
- Vice Chair, Los Angeles County EMS Commission
- Chair, LAC+USC CPR Committee and DHS Inpatient Resuscitation Committee
- Co-founder/Director, Southern California Chapter of Sudden Cardiac Arrest Foundation
- American Heart Association 2025 Resuscitation Guideline Writing Group
- Co-investigator, multiple NIH RO1s
- Immediate Past Chief Physician + EMS Bureau Commander,
  Los Angeles Fire Department (August 2021– Sept 2022)

Overview

- Fire department providing medical services
- EMS Agency Cardiac Arrest Task Force

Los Angeles FIRE Department

firefighters

provide a ***staggering*** amount of medical care

Los Angeles FIRE Department

firefighters

provide a ***staggering*** amount of medical care

Makes sense at face value:

- Always Available
- Staged in stations throughout city
- Can be trained to provide healthcare

Dream of firefighter healthcare providers NOT YET ADEQUATELY ACHEIVED

- Inadequacy of “once in a lifetime” Basic Life Support Training for EMTs
- Inadequacy of “once in a lifetime” Advanced Life support Training for PMs
- Spectacular of oversight
- Instinctive gutting of EMS QI personnel and items
- Evaporation of public health model lines of service
- Under funded RN-educator items
  - Brain drain
  - Chronically unfilled spots
  - On the job, cover too much area, too many members, insufficiently integrated

Los Angeles FD SOBER Unit Receives Top Chief Thomas Carr Community Service Award

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4 | LAFD SOBER UNIT RECEIVES COMMUNITY SERVICE AWARD

BER Unit Receives Community Service Award

, FD EMS Director Dr. Marc Eckstein directs the innovative program designed to rial inebriates.

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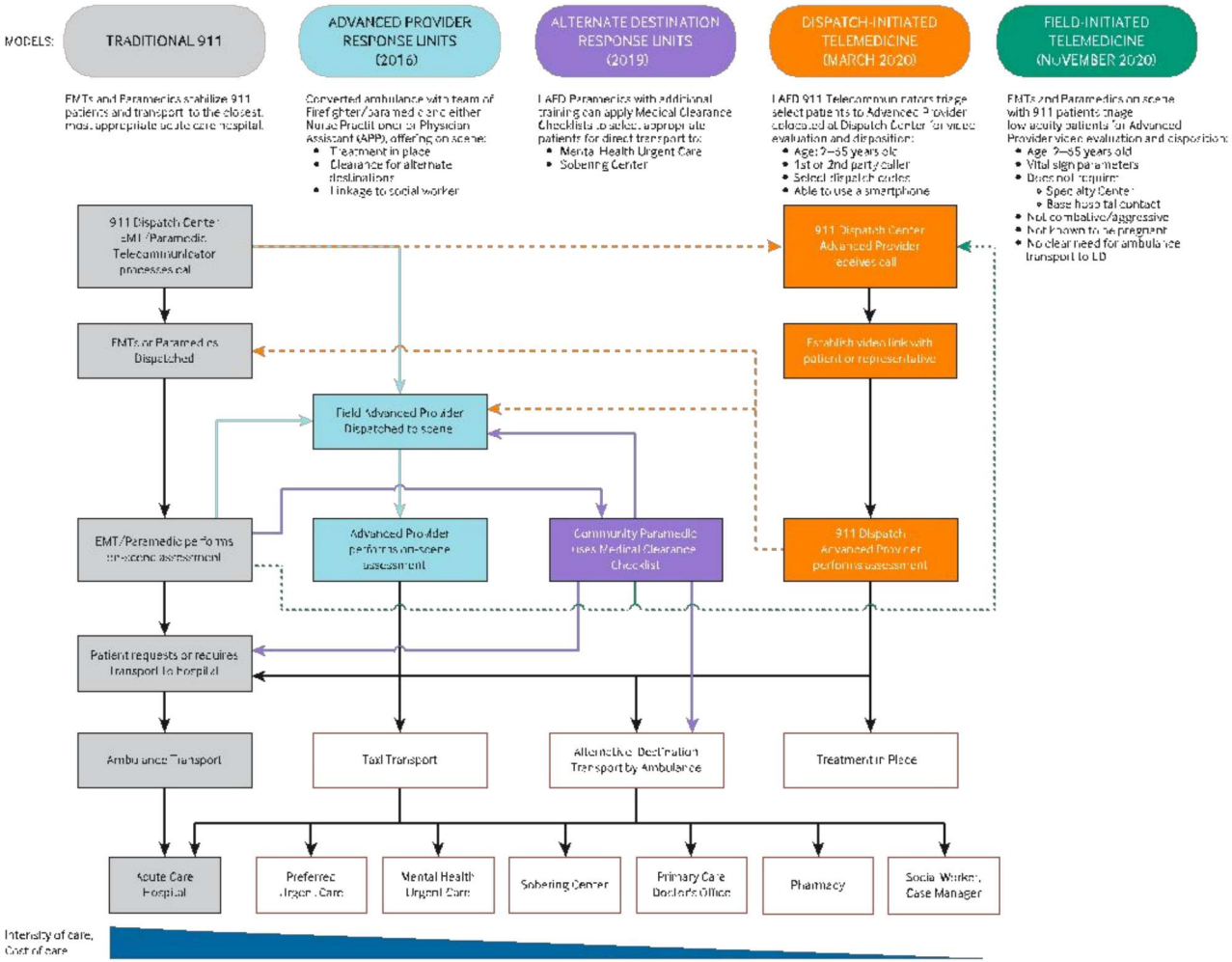

Source: The authors.

Highly concerning figures

- 40-50% of 9-1-1 patients left on scene by undertrained personnel
- 40% of field personnel on any given day have worked >48 consecutive hours
- EMS-treated cardiac arrest incidence rising, but survival is falling
- >100 LAFD chiefs, but only 1.5 MDs to oversee 500k incidents per year
  - Volume equal to 6 largest EDs combined
  - No office
  - Delayed or absent pay
  - Excluded from command staff meetings
  - Excluded from critical budgetary discussions
  - No longer presenting at Fire Commission

EMS is used by Fire leadership and unions for #'s

- 1.2M 9-1-1 calls per year
- Half million incidents per year, vague reference to "all life hazard response" but 90% are medical (<1% fire-suppression)
- EMS training rarely prioritized
  - Tower training: >16 weeks, but only 1 lecture from medical directors
  - Ongoing provider-agency specific education delayed by months to years

Concerning behavior

- Command staff decline to implement objective measurement of system efficiency
- Deputy Chief for EOPs haphazardly tinkering with dispatch algorithms for response to sickest patients without proper safety measures
- Unusual use of Kaiser Funds for non-EMS community benefit activities
- Quietly phasing out telemedicine, Therapeutic Vans, SOBER Unit based on firefighter impatience – in spite of patient efficacy
- Funding for new monitor defibrillators never allowed by CAO, never resolved

Concerning behavior

- Unpublicized behavior detrimental to patient safety
  - Dropping patients experiencing homelessness in alleys
  - Punching patients
  - Pronouncing patients dead who continue to show signs of life
  - Falsifying calls to hospital base stations to sign vulnerable patients out against medical advice

Unclear if Fire Command Staff understand (much less value) mission of life protection

- Largest provider of acute unscheduled care in Southern California, but no in-house MDs
- Provide staggering amount of critical care

Sample of provider impressions (CY2021)

- >50,000 incidents of traumatic injury, and >170 traumatic arrests
- 25,000 with mental health crisis
- >9000 seizures
- >6000 out of hospital cardiac arrests, including 2700 EMS-treated
- >1200 opioid reversals
- 139 childbirths

Unclear if Fire Command Staff understand (much less value) mission of life protection

- Largest provider of acute unscheduled care in Southern California, but no in-house MDs
- Provide staggering amount of critical care
- Disproportionately care for vulnerable populations: PEH, aging, SUD, MH

Modern medical organizations

- Large city 9-1-1 providers (# medical directors, EM+EMS Boarded)
  - FDNY: 14
  - Houston: 9
  - Cincinnati: 4 (+2 fellows)
  - LACoFD: 3
  - LAFD: 1 full time

Unclear if Fire Command Staff understand (much less value) mission of life protection

- Largest provider of acute unscheduled care in Southern California, but no in-house MDs
- Provide staggering amount of critical care
- Disproportionately care for vulnerable populations: PEH, aging, SUD, MH
- Inappropriately low degree of medical oversight

Unclear if City policy decisionmakers understand (much less value) mission of life protection

- Fire commission superficially talks about healthcare,…

…but never asks for meaningful clinical metrics of patient care or system efficiency

- Profound lack of awareness or curiosity from city leaders about mediocre healthcare provided by LAFD due to a historic resistance to embracing healthcare management principles
- Failure to frame fire department HR needs as necessary for EMS response

Unmet need for city council to actively re-organized Fire Department to provide adequate structure to support its core life-saving work (EMS)

Cardiac arrest survival

- 2000: 2.4%
- 2016: 10.6%
- 2023 5.1%
- Excess loss of life from 2016->2023: >110 lives annually
- Disproportionately affects underserved communities

Los Angeles County
EMS Commission
Cardiac Arrest Taskforce

The Challenge is Coming: Will the City of LA be prepared?

Countywide Cardiac Arrest Task Force

- Spearheaded by EMS Commission members
- Multidisciplinary, multi-jurisdictional representation
- Goal: Advise County Board of Supervisors on how to meet AHA 2030 goals
  - Bystander CPR >50%
  - AED use >20%
  - Neuro-intact survival from cardiac arrest:
    - >8% at home
    - >19% in public
  - In hospital cardiac arrest neuro-intact survival >24%

AHA SCIENTIFIC STATEMENT

The American Heart Association Emergency Cardiovascular Care 2030 Impact Goals and Call to Action to Improve Cardiac Arrest Outcomes: A Scientific Statement From the American Heart Association

February 20, 2024

Table 1. American Heart Association Emergency Cardiovascular Care Committee 2030 Impact Goals

Area	Goal	Equity
BCPR (adult >18 y)	Increase the rate of BCPR to >50% (2020 CARES: 40.2%)*	The targeted goal rate in underrepresented groups (by sex, gender, race, or ethnicity, as well as other historically underrepresented groups), and in communities with low socioeconomic status, should at least be equal to that of the general population. The targeted population includes residential and public settings and excludes nursing homes.
AED application (adult >18 y)	Increase the proportion of individuals with OHCA in a public setting who have an AED applied before the arrival of EMS to >20% (2020 CARES: 9%)	The targeted goal rate in underrepresented groups (by sex, gender, race, or ethnicity, as well as other historically underrepresented groups), and in communities with low socioeconomic status, should at least be equal to that of the general population.
Survival after OHCA (adult and pediatric)	Increase survival to hospital discharge with good neurologic outcome (CPC 1 or 2) after OHCA, as follows: Adult (>18 y): to >8% at home or residence (2020 CARES: 6.1%); to >19% in public settings (2020 CARES: 15.7%) Pediatric (<1 y): to >6% after an initial arrest at home or residence (2020 CARES: 5.3%) Pediatric (1–12 y): to >12% in public setting (2020 CARES: 10.9%); to >11.5% after an initial arrest at home or residence (2020 CARES: 10.5%); to >21% in public setting (2020 CARES: 19.2%) Pediatric (13–18 y): to >17.5% after an initial arrest at home or residence (2020 CARES: 16%); to >33% in public setting (2020 CARES: 30%)	The targeted goal rate in underrepresented groups (by sex, gender, race, or ethnicity, as well as other historically underrepresented groups), and in communities with low socioeconomic status, should at least be equal to that of the general population.
Survival after IHCA	Increase survival to hospital discharge with good neurologic outcome (CPC 1 or 2) after IHCA, as follows: Adult: to >24% (2020 GWTG-R: 16%) Pediatric: to >45% (2015–2019 GWTG-R: 34%–42%)	The targeted goal rate in underrepresented groups (by sex, gender, race, or ethnicity, as well as other historically underrepresented groups), and in communities with low socioeconomic status, should at least be equal to that of the general population.

Anticipated Recommendations for Hospitals

1. Improve pay and benefits for EMS medical directors and RN-educators

LAFD ***lacks*** adequate medical management

Modern medical organizations

- Hospitals:
  - Chief Medical Officer
  - Multiple Associate CMOs
  - Department chairs
  - 1-2 dozen physicians involved in QI and select lines of service

Consequences of having a
medical organization
without medical management

“Moving toward model of

not

having physicians involved in
day-to-day operations”

Risks of understaffing medical oversite

- Lack of appropriate quality improvement
- Lack of patient advocacy
- Delayed/absent responsiveness to emerging threats
- Poor planning for large events/disasters
- Poor stewardship of resources

Risks of understaffing medical oversite

- Lack of horizon for what high quality care looks like
- Increased non-transports
- Worsening access and health disparities
- Increased medical legal costs to City of LA
- Lack of appropriate public health collaborations to mitigate volume

Anticipated Recommendations for Hospitals

1. Improve pay and benefits for EMS medical directors and RN-educators
2. Require current BLS for EMTs and current ALS for paramedics
3. Fund resuscitation academy for all EMS captains, and education for all paramedics
4. Require AEDs for all buildings with >10 permanent employees
5. Incentivize ride shares and taxis to carry AEDs and have drivers have/use PulsePoint
6. Require short annual video training for City employees in CPR/AED use

Anticipated Recommendations for Hospitals

7. Hold new Fire Chief accountable for improving EMS metrics associated with improved survival
   - T-CPR rates
   - Time to first shock in initial-shockable OHCA
   - Time to first epi in initial-nonshockable OHCA
   - Track and report performance of high-quality CPR in all EMS-treated OHCA cases inc, CPR fraction (goal >80%), pauses >10s, transport prior to 5min observation after ROSC, transport without ROSC (except Refractory Shockable)
   - Track % of buildings assessed for AED, and info shared with Telecommunicators

Anticipated Recommendations for Hospitals

8. Require hospitals in City of Los Angeles to: Meet with EMS Medical Director, Evaluate OHCA/IHCA survivors for procedures prior to DC per AHA Survivorship recommendations; Offer Survivorship referral for OHCA patients
9. Promote investment in AED and bystander CPR in at-risk communities
10. Encourage local schools to participate in competitions related to improving care for OHCA

Take home points

- LAFD is at a crossroads, again
  - Door #1: Poor outcomes, increased disparity
  - Door #2: Continued and Increased EMS Physician leadership, better outcomes/efficiency
- Cardiac Arrest 2030 Challenge is coming
  - Health Commission needs to promote awareness
  - City Council will need to review
  - 100's of lives stand to be saved annually on this one issue

USE EMS TO SAVE LIVES, NOT JUST BUFF NUMBERS

Questions?

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