Reimagining Emergency Medical Services Through Mobile Integrated Healthcare

City of Beverly Hills Fire Department
Nurse Practitioner Program

City Leaders Summit 2023
League of California Cities

Moderator:
Julian Gold, Mayor, City of Beverly Hills

Speakers:
Greg Barton, Fire Chief, Beverly Hills Fire Department
Marc Cohen, Medical Director, Beverly Hills Fire Department
Sean Stokes, EMS Administrator, Beverly Hills Fire Department
A little about the history of EMS
Communities & Health

• Over utilization of 911

• Increase in:
  • Patients suffering from mental health
  • Homelessness
  • Drug & alcohol addiction
  • Violence

• Increase in:
  • Early hospital patient discharge
  • Patients not able to care for self
  • Elderly population
  • Elderly / family estrangement

• Increase in residents with worsening Social Determinants of Health

• Scarcity of Fire / EMS resources (including EMTs + EMT-Ps)
Nurse Practitioner Program
City of Beverly Hills Fire Department

Nurse Practitioner Unit
Nurse Practitioner Program Goals

- Complement the Paramedic service
- Provide comprehensive healthcare in the field
- Preserve EMS resources for emergencies
- Avoid unnecessary transport to crowded Emergency Depts.
- Allow patients to Age in Place
- Lower overall healthcare costs
A little about the City of Beverly Hills

Located within Los Angeles County

5.7 square miles

Residential population 35,000

Daytime population of up to 300,000
A little about the BHFD

- 3 Stations
  - 3 Ambulances
    (each staffed with two Firefighter/Paramedics)
  - 1 Nurse Practitioner Unit
    (staffed with a Firefighter/Paramedic & a Nurse Practitioner)

- 7000+ calls / year
  - 5000+ calls EMS
Total EMS Dispatches to Non Patient Transports to Hospital - 2021

- Total EMS Dispatches
- Total Non Transport

JAN FEB MAR APR MAY JUNE JUL AUG SEP OCT NOV DEC
EMS Current Response

911 call – ‘Lights & Sirens’

Proactive Approach

Reactive Approach

Treat & Release
Treat & Transport to Emergency Dept.

Advanced Provider

Over utilization
Reactive Approach

- Responding in the field to low acuity calls
- Providing Treat in Place service

Proactive Approach

- Follow up on patients
- Early intervention
- Non emergent consultations
- Collaboration with healthcare providers and community resources
- Comprehensive approach
- Bridge patients back to their health homes
Total Nurse Practitioner Unit Encounters
Jan 2019 to Feb 2023

NPP Encounters
EMS Runs (by pcr)
911 Utilization: 2016 - 2018 compared to 2019 - 2022
(random sample - 15%)

- 51% Decrease in 911 calls
- 37% Increase in 911 calls
- 12% No change in 911 calls
## Patient Encounter Table

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<th>PM</th>
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# Social Services and the NP Program

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<td>Caregiver/Family/Social Network</td>
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<td>Formal Services</td>
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<tr>
<td>Living Arrangement/Home Safety</td>
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<tr>
<td>Physical Functioning (ADL/IADL)</td>
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<td>Other</td>
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Paradigm Shift

- Continual expansion of services specific to
  - Senior citizens
  - Homeless
  - Mental Health
Paradigm Shift

- Continue coordination with hospital case management, discharge planners and providers (both private practice and hospital based)

- Close gap & build continuum between hospital & EMS
  - ‘Hospital at Home’ response
  - ‘Alternative Destination’ + conduit back to health home + new referrals
Paradigm Shift - Mobile Integrated Health (MIH)

- Community Paramedicine
- Advanced Practice Providers
- Alternate Destination
- Telemedicine
MIH: Mapping the Road Ahead

- Champions
- Health system buy in
- Identify community needs
- Determine scope of program
- Underwriting
- Equipment and policies

https://www.ncqa.org/white-papers/population-health-management-roadmap/
Financial Considerations

- Total cost of the NP Program
  - Start up cost - $640K
  - Annual Labor
    - NP coverage 7 days / week - $400K (contractual)
    - PM coverage 7 days / week - $600K (salary + benefits)
    - Social Worker Services - $200K (contractual)
  - Annual non labor / operations - <$50K

- Explore payor reimbursement
  - Participate in CMS’ ET3 Model (Emergency Triage, Treatment, Transport)
  - Commercial payor participation

- Other ROI
  - Increase in patient satisfaction
  - Improved health (individual & community)
  - Increase in operational readiness of City resources
  - Potential City savings
Cost to City/Fire Department

- 74 y/o female
- Parkinson's Disease
- 16 calls over 12 months
- Primarily for falls or weakness at night

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<th>Fire Department Cost</th>
<th>12 month period</th>
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<td>Cost per Run Type</td>
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<td>12 month total</td>
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Case Review

• Elderly patient
• Calls 911
• Chief complaint of abdominal pain
  • Paramedics followed County treatment protocol – left patient on scene
  • Paramedics dispatched NP Unit to patients home
  • NP diagnosed patient with bowel impaction
  • NP attempted manual disimpaction patient at home
  • Paramedics called back out to transfer patient to hospital
• Admitted for bowel obstruction
• Underwent invasive disimpaction procedure following day
• Patient discharged
But what if ???

• Paramedics followed County treatment protocol – left patient on scene

• Over next day or two, impaction progresses to perforated bowel
• Patient becomes septic

• Patient calls 911
• Patient transported to ED, acutely ill, with an increased mortality rate / decreased chance of survival from hospital
BEVERLY HILLS FIRE DEPARTMENT
Nurse Practitioner Program – MARCH 2023

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Nurse Practitioner

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Nurse Practitioner

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Nurse Practitioner

Erin West FNP
Nurse Practitioner

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Firefighter 80

Christopher Hobbs
Firefighter 80

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City of Beverly Hills Fire Department NPP website  
http://www.beverlyhills.org/departments/firedepartment/nursepractitionerprogram/web.jsp