



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



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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)



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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





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A little about the City of Beverly Hills



Located within
Los Angeles
County



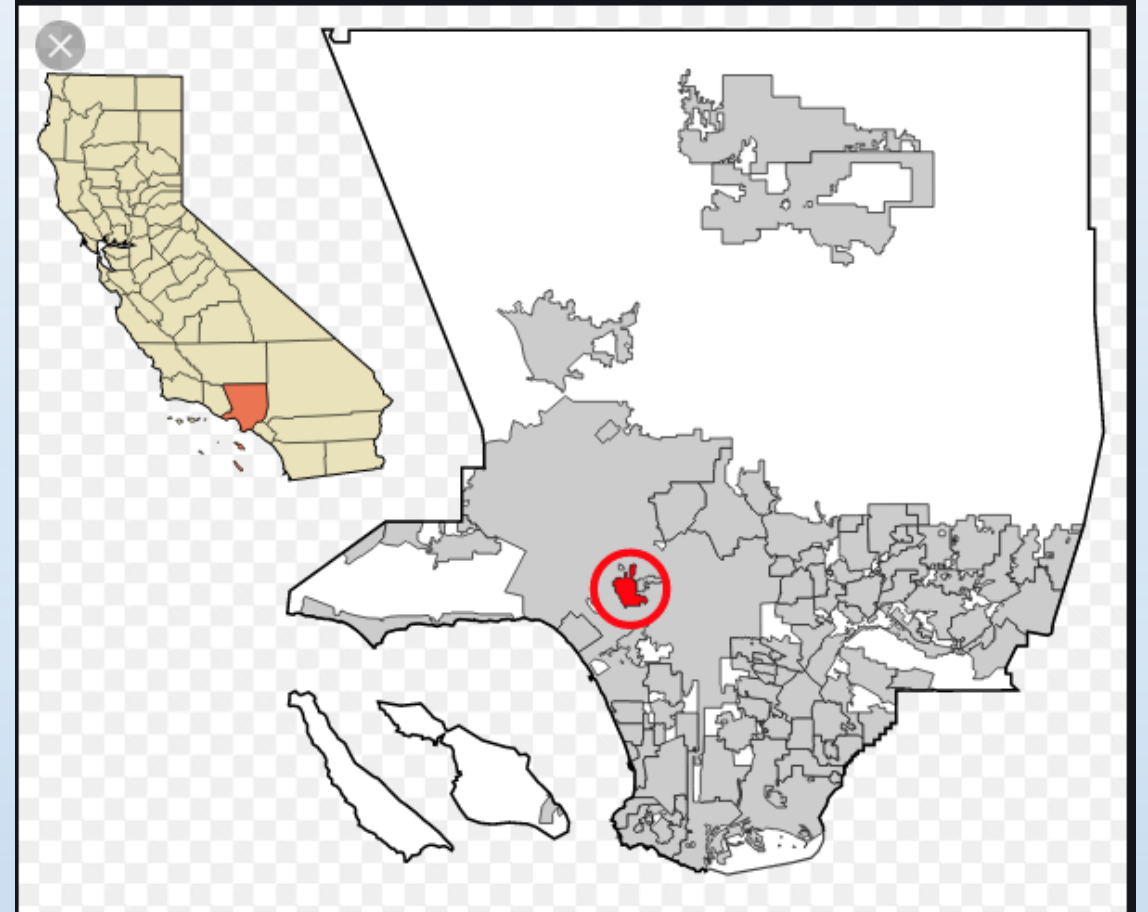
5.7 square
miles



Residential
population
35,000



Daytime
population of
up to 300,000





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A little about the BHFD

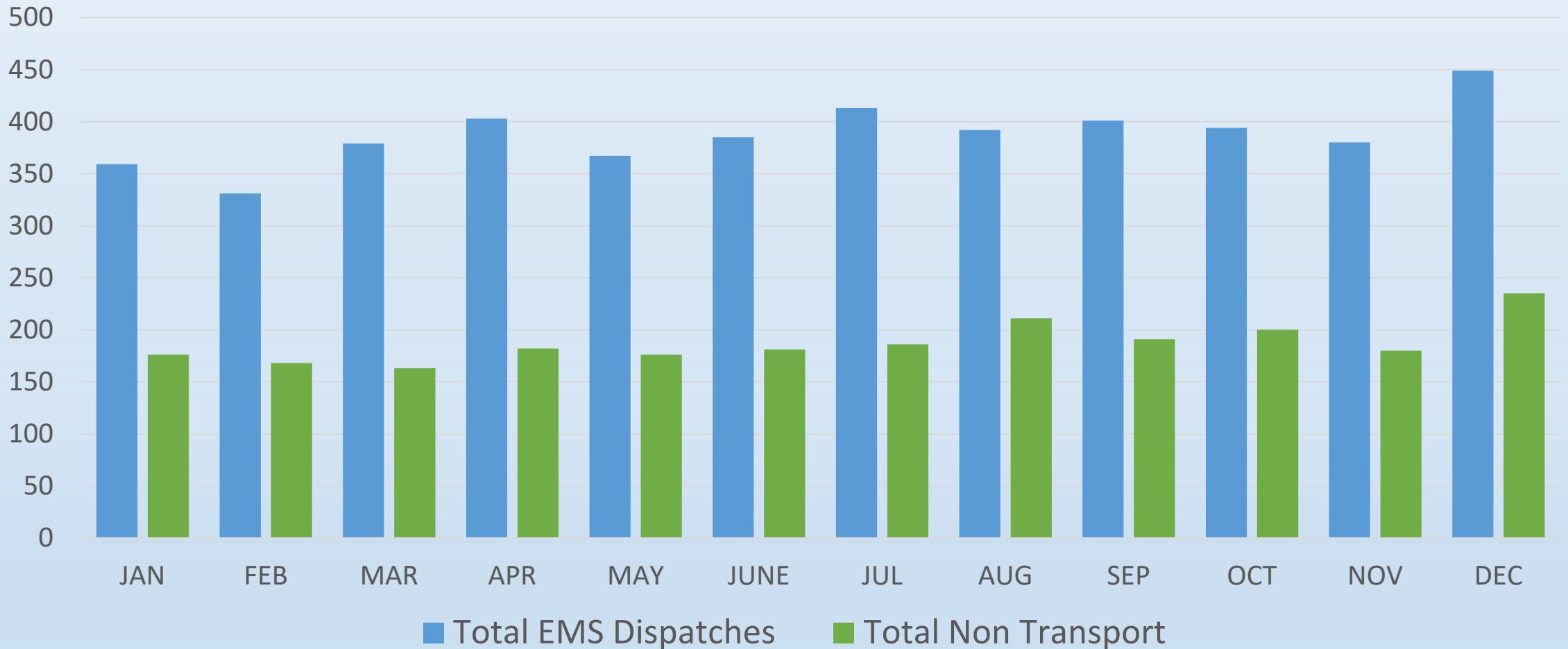
- 3 Stations
 - 3 Ambulances
(each staffed with two Firefighter/Paramedics)
 - 1 Nurse Practitioner Unit
(staffed with a Firefighter/Paramedic & a Nurse Practitioner)
- 7000+ calls / year
 - 5000+ calls EMS





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Total EMS Dispatches to Non Patient Transports to Hospital - 2021

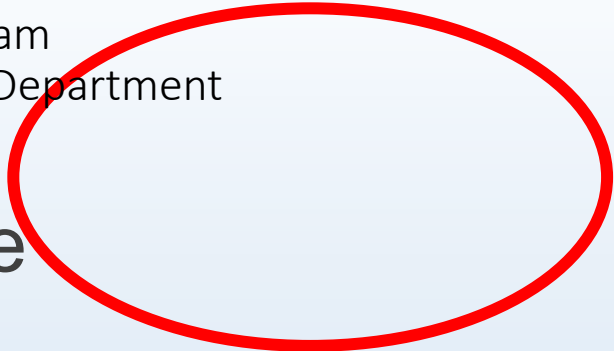




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Proactive Approach

EMS Current Response



911 call – ‘Lights & Sirens’



Advanced Provider

Treat & Rel

Over utilization

Treat & Rel to Emergency Dept.



Reactive Approach





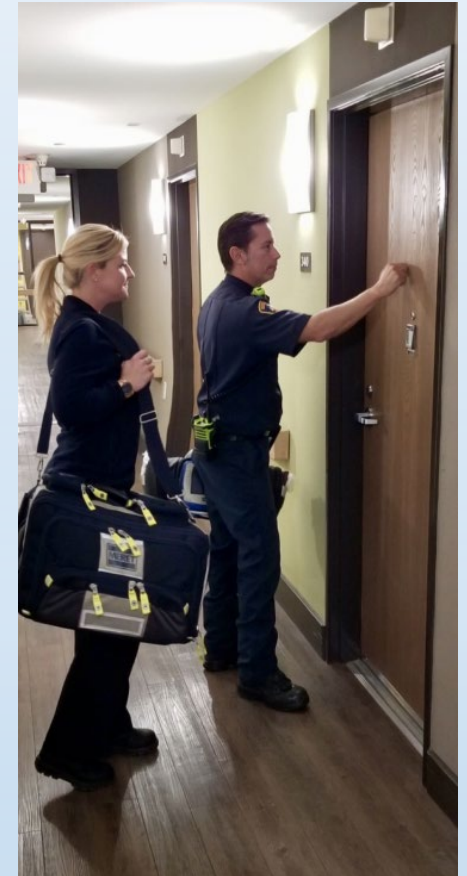
Reactive Approach

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



Proactive Approach

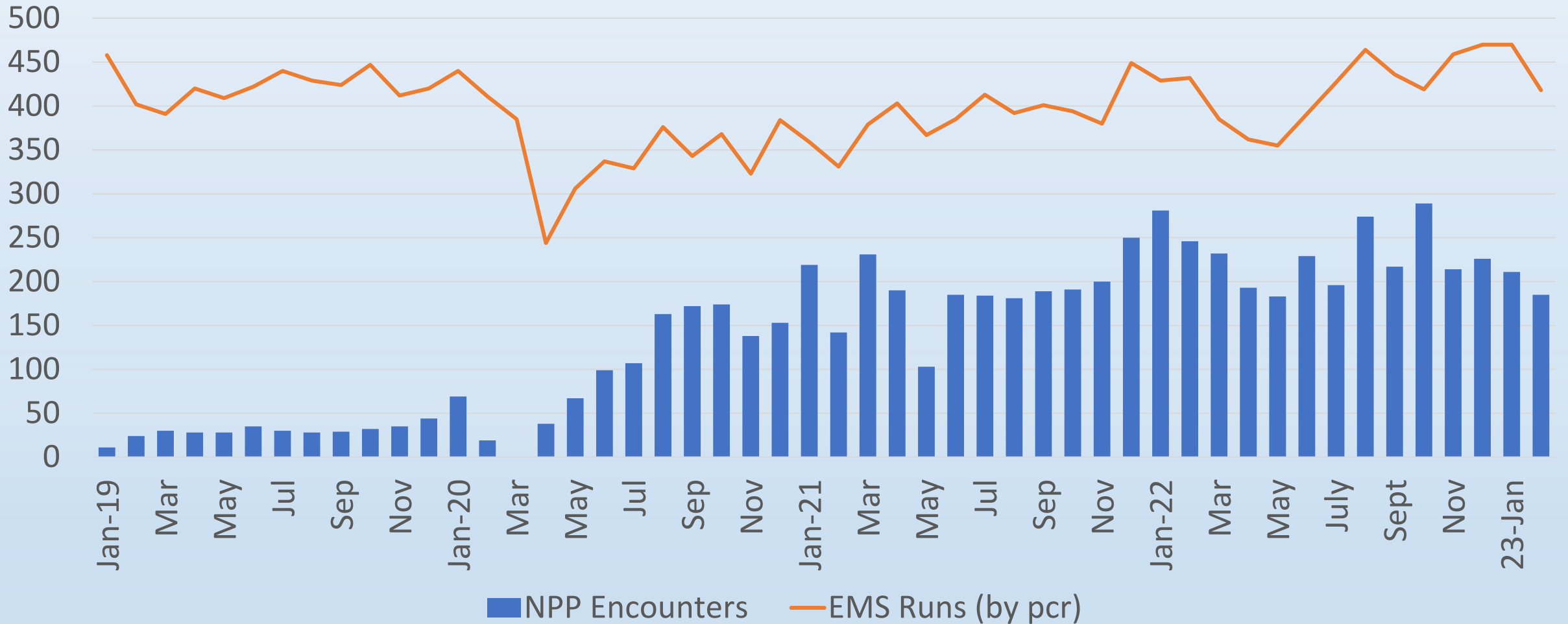
- Follow up on patients
- Early intervention
- Non emergent consultations
- Collaboration with healthcare providers and community resources
- Comprehensive approach
- Bridge patients back to their health homes





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Total Nurse Practitioner Unit Encounters Jan 2019 to Feb 2023



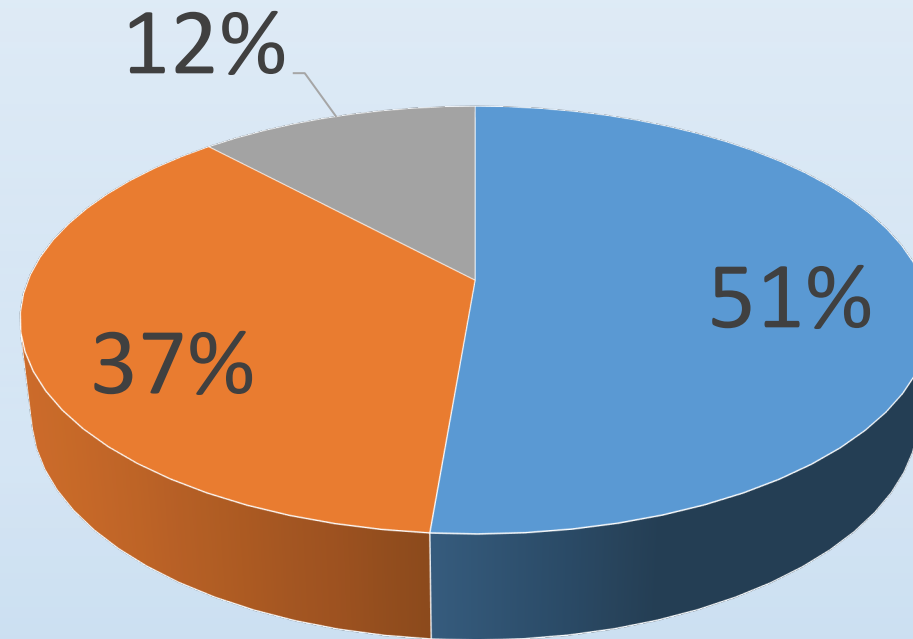


911 Utilization: 2016 - 2018 compared to 2019 - 2022 (random sample - 15%)

■ Decrease in 911 calls

■ Increase in 911 calls

■ No change in 911 calls





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| PATIENT | | | ENCOUNTERS | | |
|---------|------------------|-----|------------|----|-------|
| # | NAME | DOB | NP | PM | TOTAL |
| 367 | Mickey Mouse | | 1 | 1 | 2 |
| 368 | Donald Duck | | 1 | 11 | 12 |
| 369 | Goofy | | 1 | 1 | 2 |
| 370 | Minnie Mouse | | 9 | 3 | 12 |
| 371 | Dumbo | | 1 | 1 | 2 |
| 372 | Cinderella | | 36 | 7 | 43 |
| 373 | Princess Jasmine | | 1 | 1 | 2 |
| 383 | Belle | | 4 | 9 | 13 |
| 374 | The Beast | | 2 | 2 | 4 |
| 375 | Daisy Duck | | 2 | 5 | 7 |
| 376 | Pluto | | 55 | 2 | 57 |
| 377 | Alladin | | | 18 | 18 |
| 378 | Moana | | 3 | | 3 |
| 379 | Chip | | 1 | 1 | 2 |
| 380 | Dale | | 2 | 2 | 4 |
| 381 | Iron Man | | 16 | 6 | 22 |
| 382 | Captain America | | 1 | 3 | 4 |
| 384 | Spider Man | | 1 | 4 | 5 |
| 385 | Thor | | 10 | 1 | 11 |
| 386 | Black Widow | | | 2 | 2 |
| 388 | Sebastian | | 1 | 5 | 6 |
| 389 | Thumper | | | 1 | 1 |
| 390 | Alice | | | 5 | 5 |
| 391 | Bamby | | 1 | 7 | 8 |
| 392 | Cheshire Cat | | 1 | 1 | 2 |
| 393 | Sully | | 2 | 3 | 5 |
| 394 | Elsa | | 2 | 4 | 6 |
| 395 | Winnie the Poo | | 1 | 9 | 10 |
| 396 | Tiger | | 10 | 1 | 11 |
| 397 | Piglet | | 53 | 66 | 119 |
| 398 | Roo | | 1 | 1 | 2 |



Social Services and the NP Program

Need Type

Caregiver/Family/Social Network

Cognitive/Psychological Functioning

Financial/Legal

Formal Services

Living Arrangement/Home Safety

Physical Functioning (ADL/IADL)

Other



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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

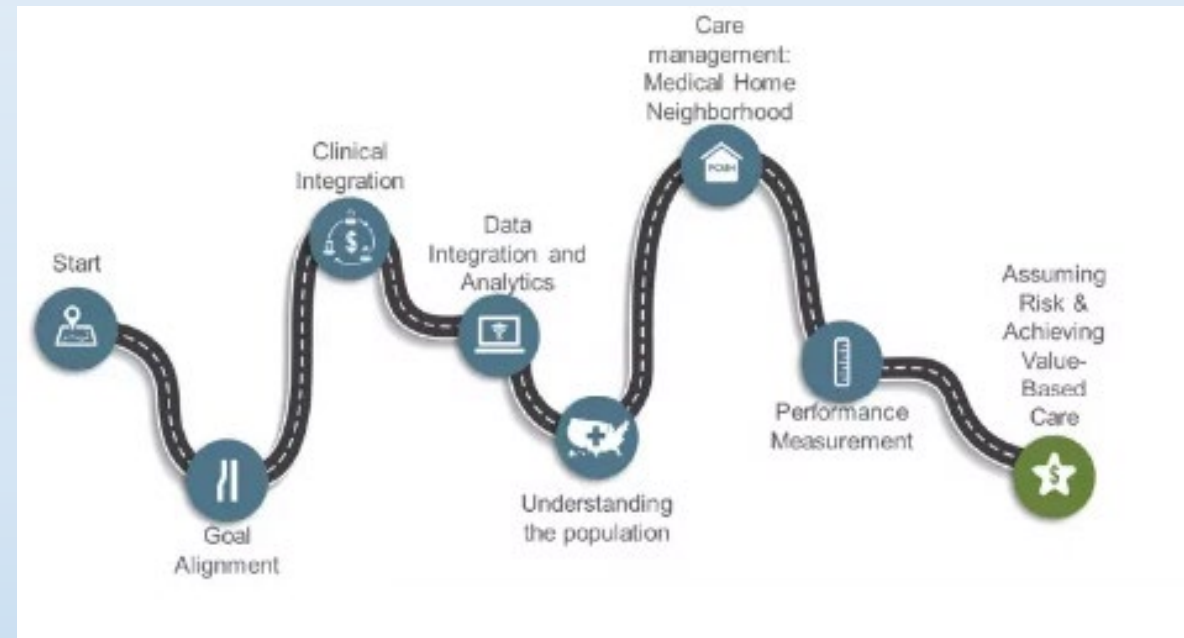
Advanced
Practice
Providers

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

| Fire Department Cost | | |
|------------------------|--------------------|------------|
| <i>12 month period</i> | | |
| | Cost per Run Type | # of calls |
| ALS Tx | \$1,795.00 | 3 |
| ALS Assist | \$1,004.00 | 13 |
| 12 month total | \$18,437.00 | 16 |



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



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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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City of Beverly Hills Fire Department NPP website

<http://www.beverlyhills.org/departments/firedepartment/nursepractitionerprogram/web.jsp>