Infinite Potential
Community Paramedicine

Presented by

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Program Supervisor Life Lion Community Paramedicine

It's Not the Money that Keeps a Community Paramedicine Coordinator Awake at Night

Sat, Sep 15, 2018 | By Jonathon S. Feit, MBA, MA

Community paramedicine has ambulance runs down while paramedic morale is up

By Miranda Combs | Posted: Mon 6:11 PM, Sep 10, 2018 | Updated: Mon 6:37 PM, Sep 10, 2018


Nursing home patient treatment a concern for some when hospital trips needed


Community Paramedicine Program helps hundreds in Lexington, saving taxpayers millions


Report: Number of children overdosing on the rise


How Google, Facebook 'know your deepest, darkest secrets'


WKYT Investigates | Neighbors take to social media to shame other homeowners


WATCH Jim Caldwell's FastCast


Sports Buzz Podcast - Governor Matt Bevin


WATCH WKYT to air national anthem at end of every broadcast day

Paramedics trying to prevent emergency room visits in Lancaster County

POSTED 8:39 PM, MAY 15, 2019, BY GRACE GRIFFATON, *UPDATED AT 03:44PM, MAY 15, 2019*

POPULAR


Teenager dies after stabbing in Lancaster city


USGS: 3.4-magnitude earthquake reported in Juniata County


Police chief gives $575 ticket to d for throwing lit cigarette out car window


Arrest warrant issued for Harrisb man after he failed to return

Harrisburg

Life Lion paramedics trained to make follow-up visits

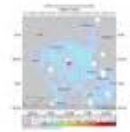
By: Taylor Tosheff

Posted: May 23, 2019 06:04 PM EDT
Updated: May 23, 2019 06:04 PM EDT

Trending Stories

1 USGS confirms earthquake shook central Pennsylvania
2 Pennsylvania charges over 170 with welfare fraud
3 Man wants new sentence in teen's rape, murder, dismemberment
4 I-81 off-ramp in Harrisburg will close until Thanksgiving
5 Primanti Bros. to open with free sandwiches in Camp Hill

Latest Local


Small earthquake felt, heard all over central Pennsylvania


Man dies after motorcycle crash in Cooke Township

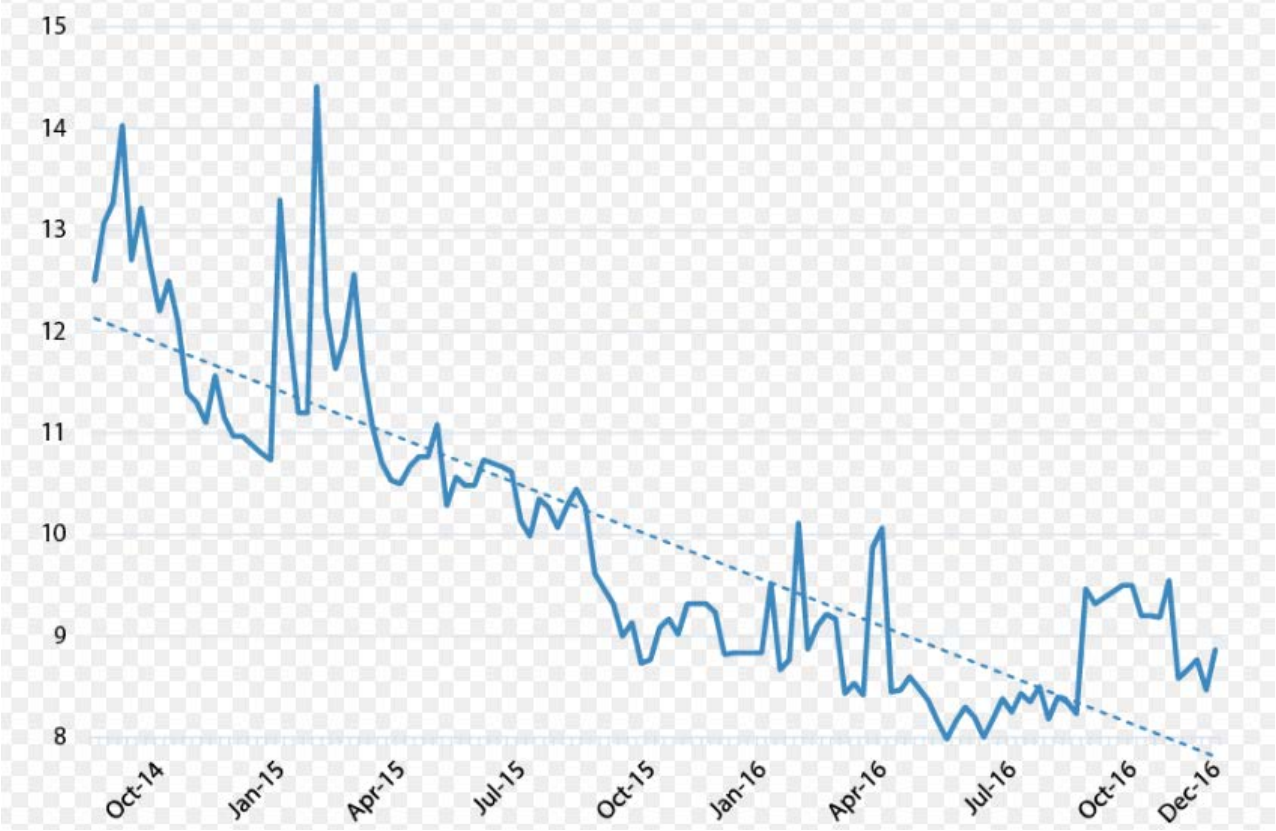

16-year-old dies after stabbing in Lancaster

Objectives

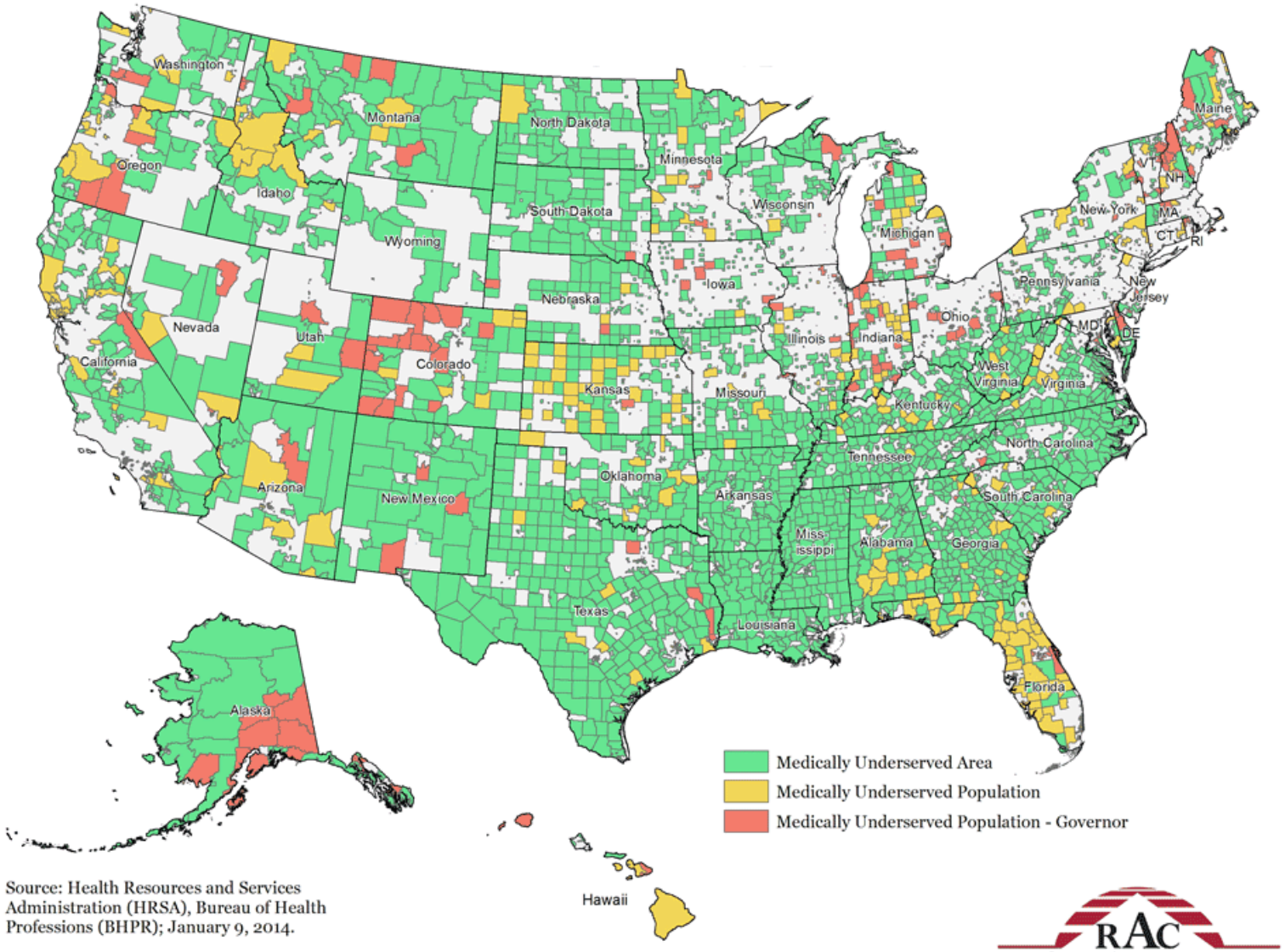
- Define “Community Paramedicine”
- Identify the goals of Community Paramedicine
- Describe the nature of Community Paramedicine clinical care
- Describe the development of an active Community Paramedicine program
- Evaluate clinical and financial impact of existing program

What is Community Paramedicine?

Where old medics go to die?



EMS-driven community-based healthcare model to facilitate appropriate use of emergency care resources



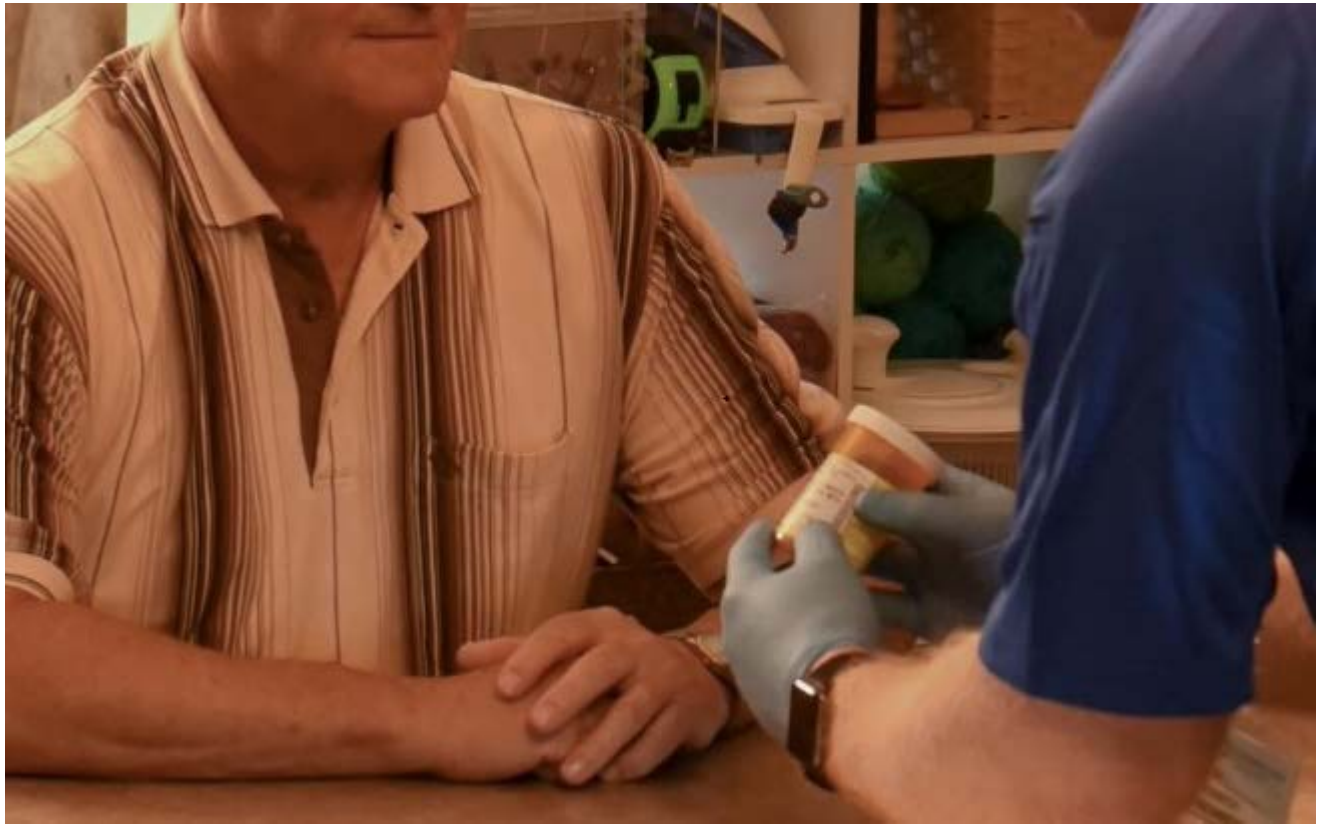
Source: Health Resources and Services Administration (HRSA), Bureau of Health Professions (BHPR); January 9, 2014.

Note: Alaska and Hawaii not shown to scale

RAC
Rural Assistance Center

Community-based program to enhance access to primary care for medically-underserved populations

Hospital-affiliated program to enhance chronic disease management post-discharge



A clinical resource that provides timely evaluations and interventions to prevent avoidable transports or hospital admissions

A service to provide health system navigation to connect patients with relevant interdisciplinary resources

Which is it?

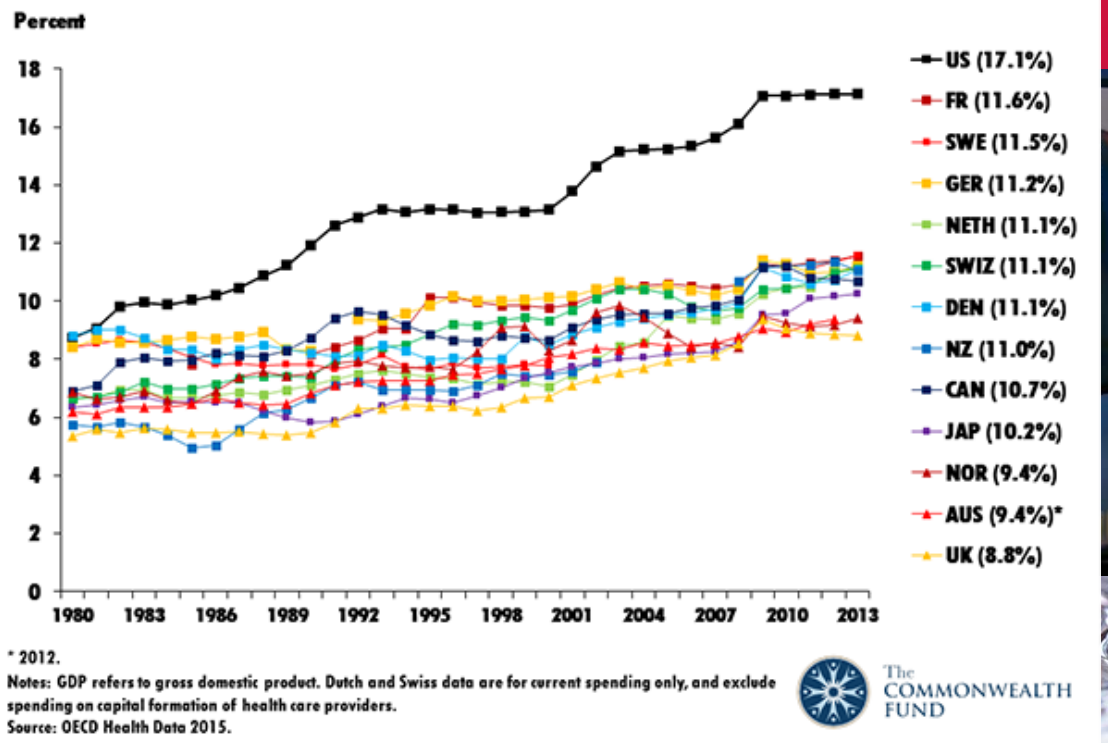
What is Community Paramedicine?

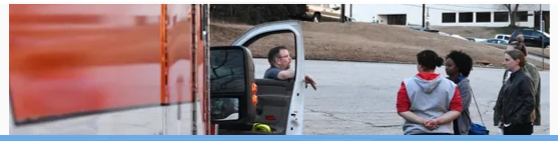
- EMS-driven community-based healthcare model to facilitate appropriate use of emergency care resources
- Community-based program to enhance access to primary care for medically-underserved populations
- Hospital-affiliated program to enhance chronic disease managed post-discharge
- A clinical element to provide timely evaluations and interventions to prevent avoidable transports or hospital admissions
- A service to provide health system navigation to connect patients with relevant interdisciplinary resources

Whatever Your Community Needs

Big Picture

Pennsylvania Facing Fire and EMS Crisis



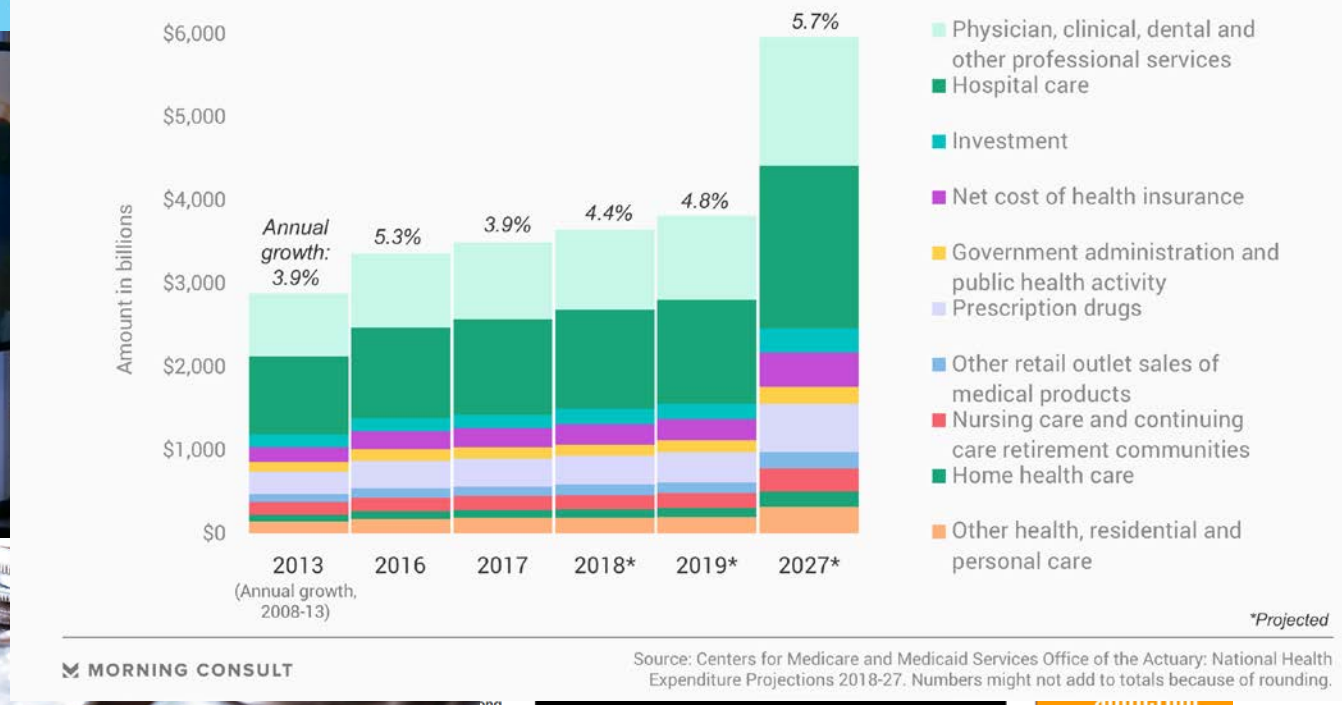


crumbling
being hit b
June 20, 2019

Lawsuit: Pi
pleaded 'fo

EMS IN

EMS services feeling paramedic shortage



TOOLS

A recent *Wall Street Journal* article predicted that health care costs will reach 20 gross domestic product (GDP), and it included a series of charts showing how ar
have risen. Alas, the newspaper, like the health policy field, failed to note an important date

The December ruling by Texas District Judge Reed O' Conner that the entire Affordable Care Act (ACA) was unconstitutional followed by the Department of Justice's ruling in agreement to strike down the entire ACA this week has the potential to intensify efforts to repeal the ACA.

TOPICS

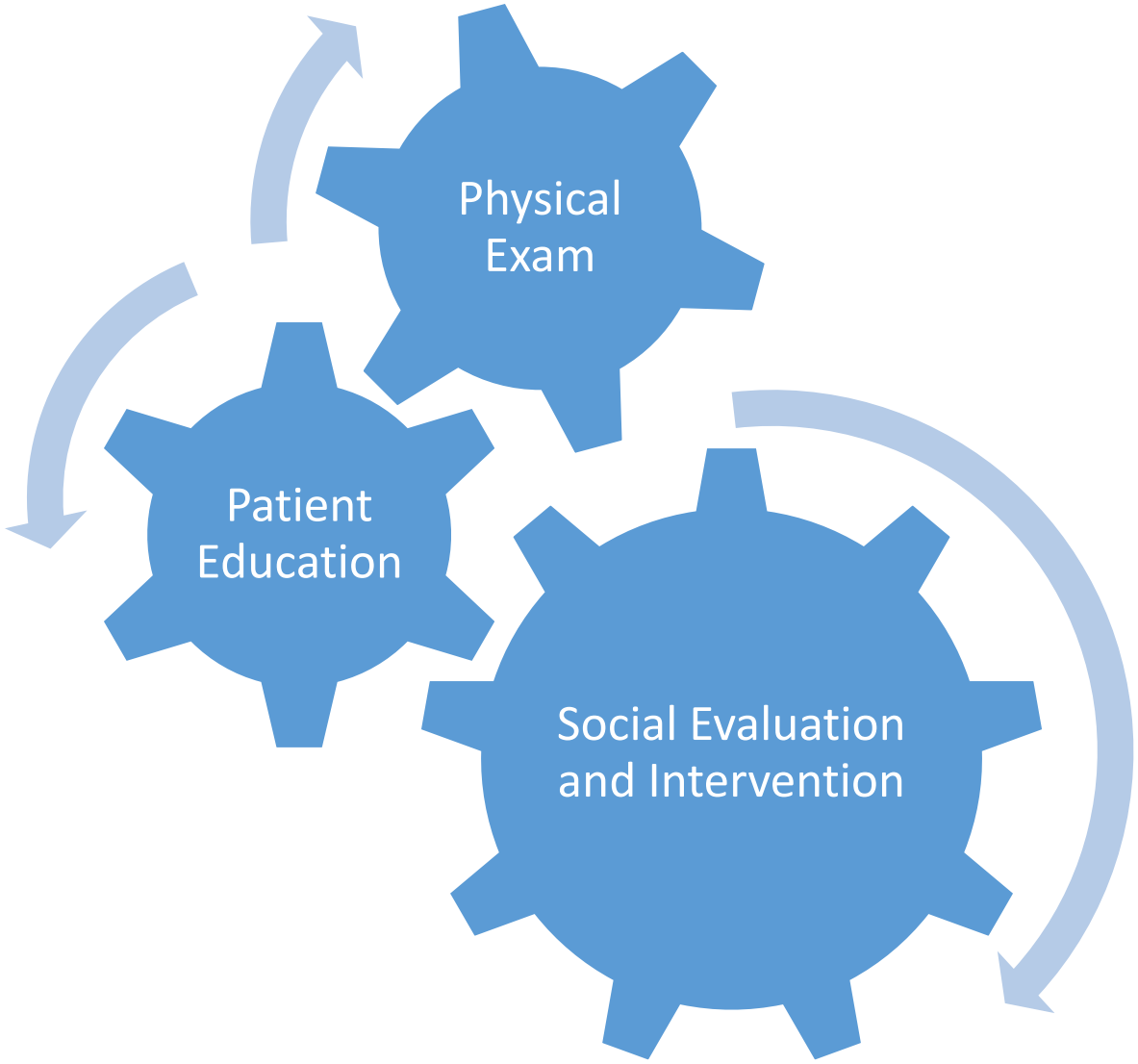
addiction.

DON'T TRUST JUUL:
STOP FLAVORED TOBACCO NOW.

Community Paramedicine Patient Care

Patient Introduction

- 30 year old female
- EMS/ED patient at least once per week
- Minimal insurance
- Noncompliance with diabetic care
- Noncompliance with heart failure care
- Significant drug history
- Enabling family structure



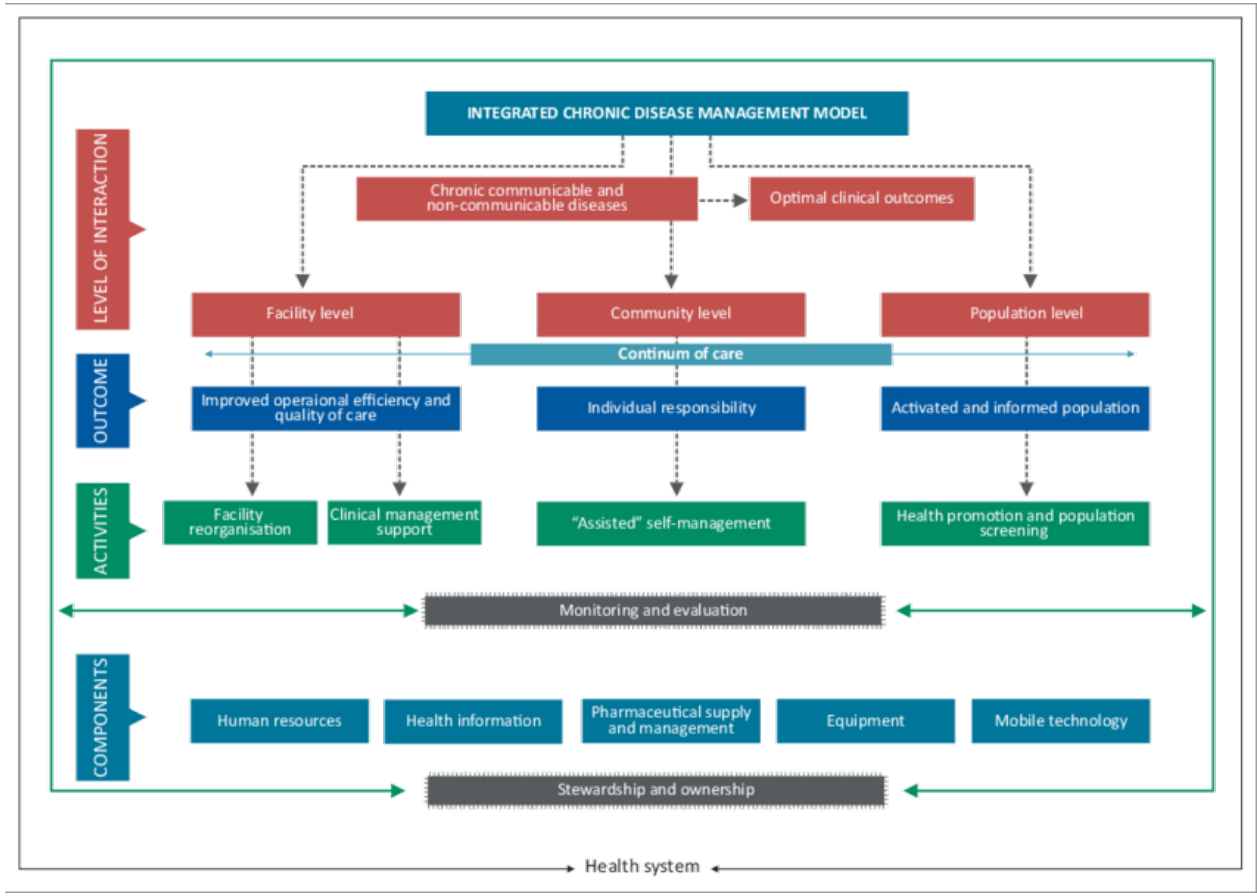
Home Visits

- Review history leading to admission/EMS contact
- Reinforce discharge instructions
- Medication reconciliation
- Thorough physical exam
- Provide tools/education to help patients manage care
- Reinforce communication options
- Social evaluation
- Interventions

Potential Purview

Chronic or acute disease management

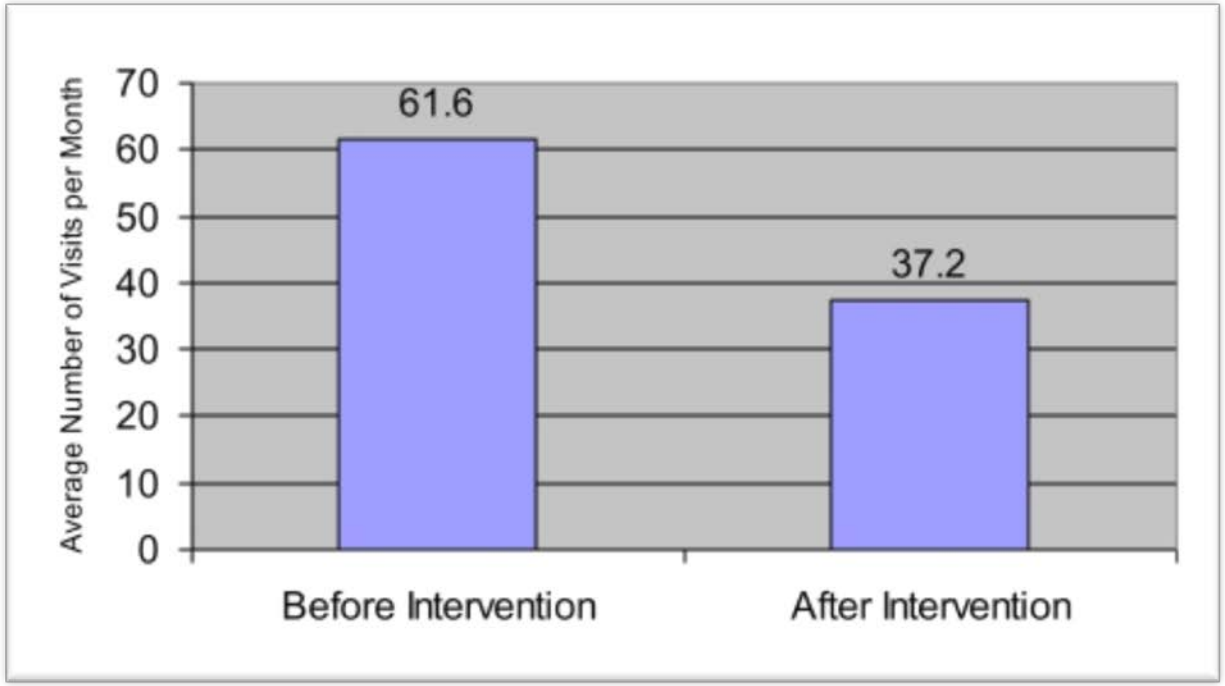
- Heart Failure
- COPD
- Pneumonia
- Stroke
- Diabetes
- Sepsis
- CAD
- Psychiatric
- VAD



Potential Purview

EMS/Hospital/Community Support

- EMS “Super Users”
- ED Super-utilizers
- Opioid assistance programs



Potential Purview

Emerging concepts

- Telehealth facilitation
- Non-emergent scene response (ET3)***
- Expanding POC access

Community Paramedicine Goals

Possible Community Paramedicine Goals

Measurable impact

- Reduce inappropriate utilization
- Reduce hospital readmissions
- Fee-for-service

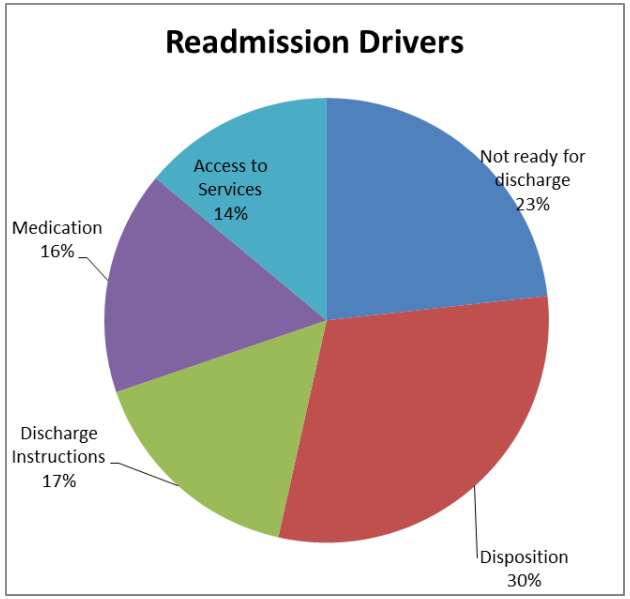
Outreach

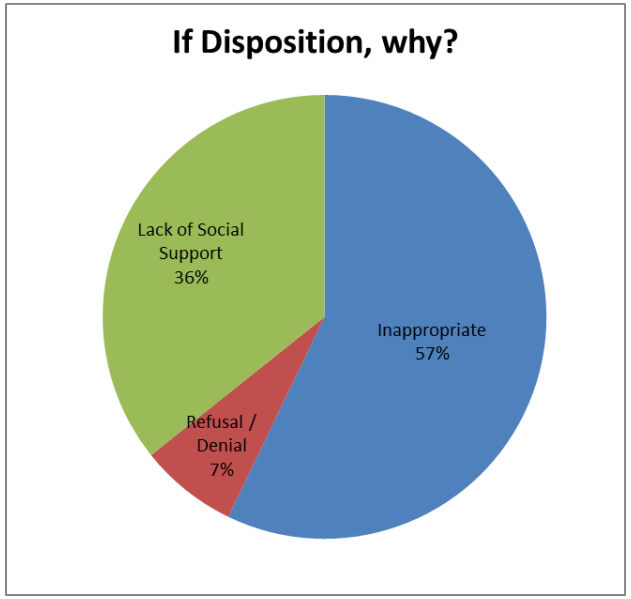
- Satisfaction
- General system navigation

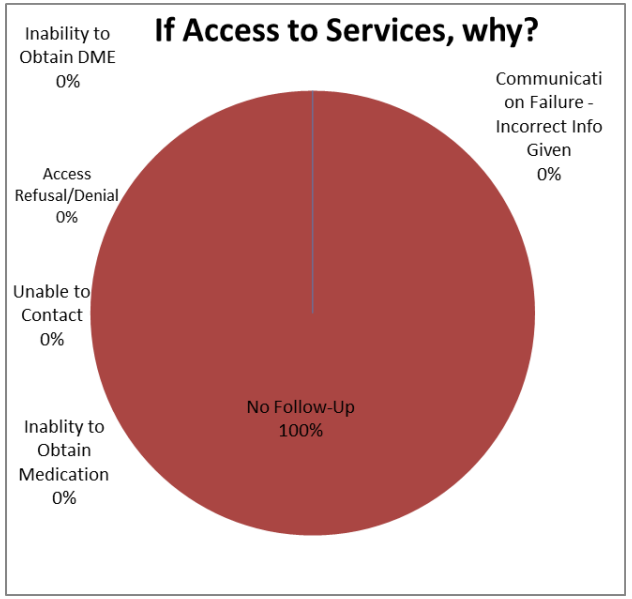
Specific community or system utility

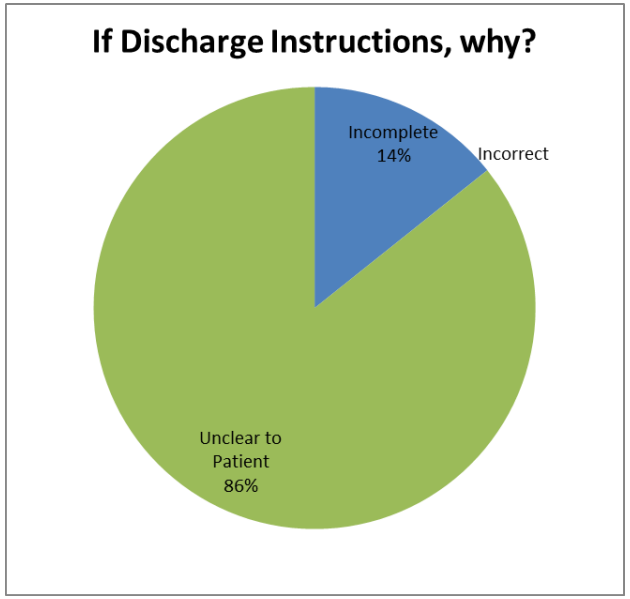
Readmissions

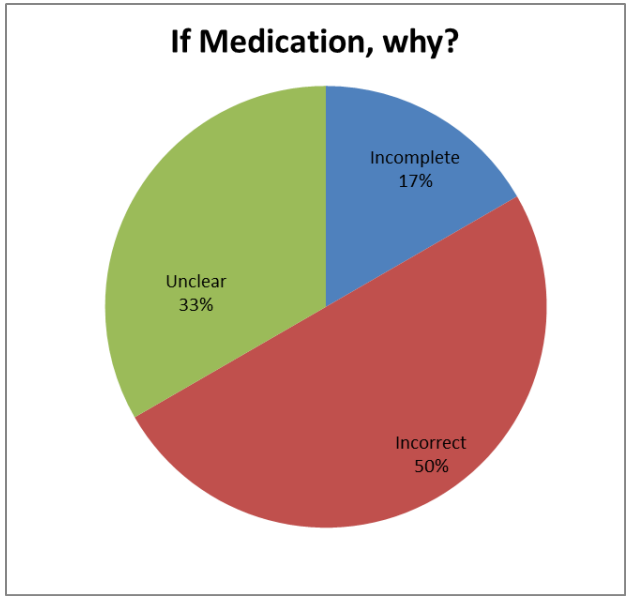
- Hospital readmissions incur varying costs and penalties to hospital systems
- Readmissions may require recurring EMS transport needs with poor reimbursement
- Patients that may have had an avoidable readmission are occupying bed space that may have been denied to another potential patient

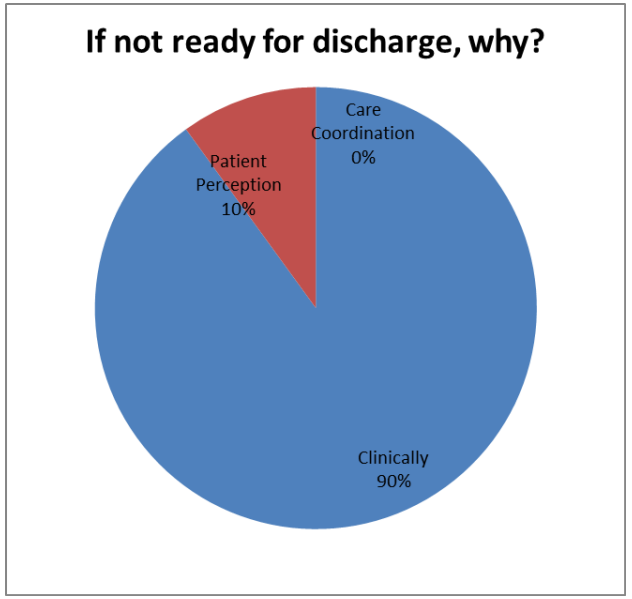

Readmission Drivers
Not ready for discharge 23%
Disposition 30%
Discharge Instructions 17%
Medication 16%
Access to Services 14%


If Disposition, why?
Inappropriate 57%
Refusal / Denial 7%
Lack of Social Support 36%


If Access to Services, why?
Communication Failure - Incorrect Info Given 0%
No Follow-Up 100%
Inability to Obtain DME 0%
Access Refusal/Denial 0%
Unable to Contact 0%
Inablity to Obtain Medication 0%


If Discharge Instructions, why?
Incomplete 14%
Incorrect
Unclear to Patient 86%


If Medication, why?
Incomplete 17%
Incorrect 50%
Unclear 33%


If not ready for discharge, why?
Care Coordination 0%
Clinically 90%
Patient Perception 10%

Readmissions

Causes of readmissions

- Exacerbation of underlying disease
- Confusion with discharge instructions
- Exacerbation of comorbidity
- Prescription medication errors or noncompliance
- Care plan noncompliance
- Patient unfamiliarity with alternative communication/treatment options

Readmissions

Causes of readmissions

- Exacerbation of underlying disease
  - Physical exam, blood draw, early recognition and communication with primary care team/PCP
- Confusion with discharge instructions
  - Discharge material reinforcement and clarification, supplemental educational materials provided
- Exacerbation of comorbidity
  - Physical exam, blood draw, history review, family interaction

Readmissions

Causes of readmissions

- Prescription medication errors or noncompliance
  - Medication reconciliation, communication with primary care team, communication with pharmacist
- Care plan noncompliance
  - Review and reinforcement of discharge instructions, family interaction, providing resources to streamline self-care
- Patient unfamiliarity with alternative communication/treatment options
  - Educate as to when-to-call, and who-to-call before it's too late

Patient Revisited

- 30 year old female
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Patient Revisited

- Known as the *highest utilizing patient* in the hospital system
- Emergency Department attendings warned that that there was little to no change to make an impact

Patient Revisited

- Visited four times at home
- Got to know her, her family, and her situation
- Helped develop sustainable dietary changes
- Improved diabetic care
- Educated and re-engaged family members into care
- Facilitated changes with care team
- Connected patient to appropriate local outpatient resources

Was not admitted to system for over one year

Life Lion Community Paramedicine

PennState Health
Milton S. Hershey Medical Center

Life Lion Community Paramedicine

Staffing

- 4 FTEs
- 3 paramedic field clinicians
- 1 supervisor

Resources

- 3 repurposed police vehicles
- Basic and specialty equipment load outs
- Cerner communication and documentation access

Support

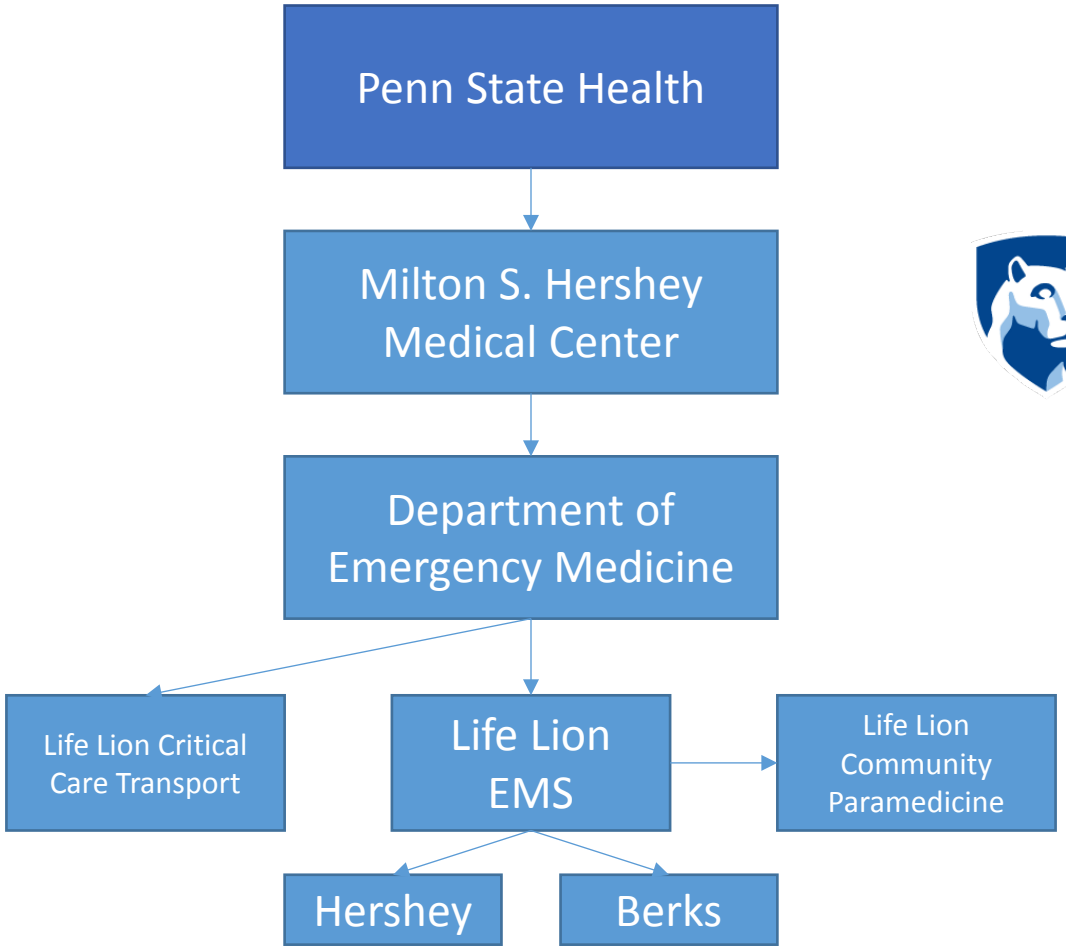
- Heavily engaged medical direction team
- Partnerships with PSH Heart and Vascular Institute and the Department of Neurology

Life Lion Community Paramedicine

Free service to patients

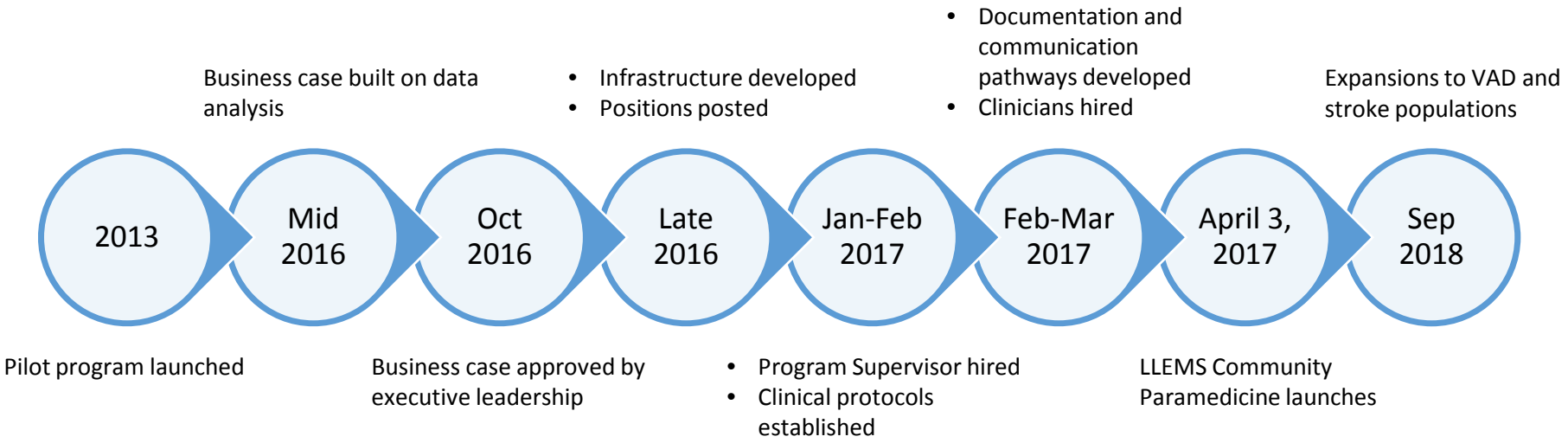
- Originally tasked to address heart failure patients discharged from hospital
- Subsequent expansions into Ventricular Assist Device (VAD) and stroke populations
- Extensive analysis has demonstrated the clinical and financial impact of the model
- Future expansions may impact other pertinent outcome and operational metrics

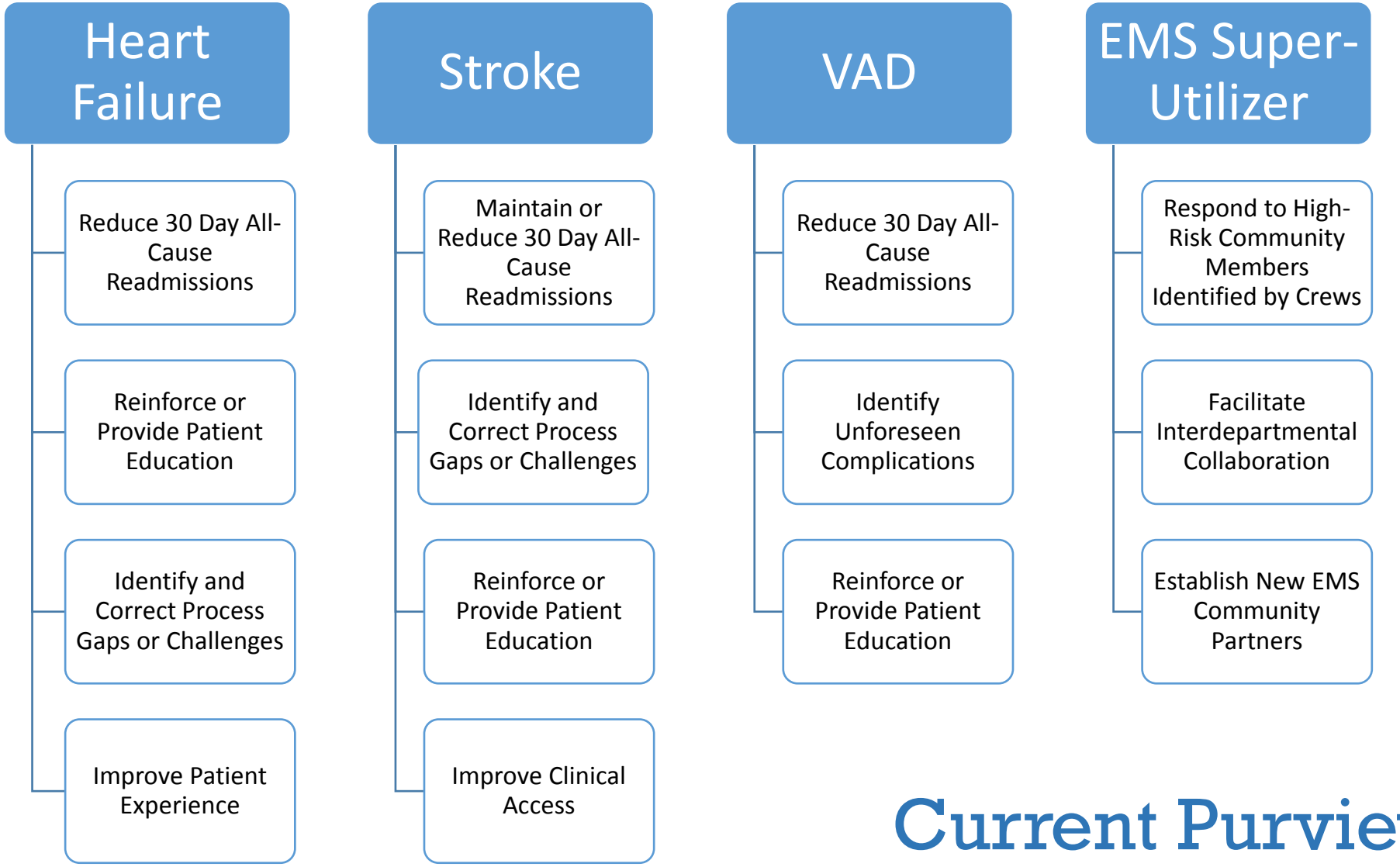
Life Lion Overview



PennState Health
Milton S. Hershey Medical Center

LLEMS Community Paramedicine History





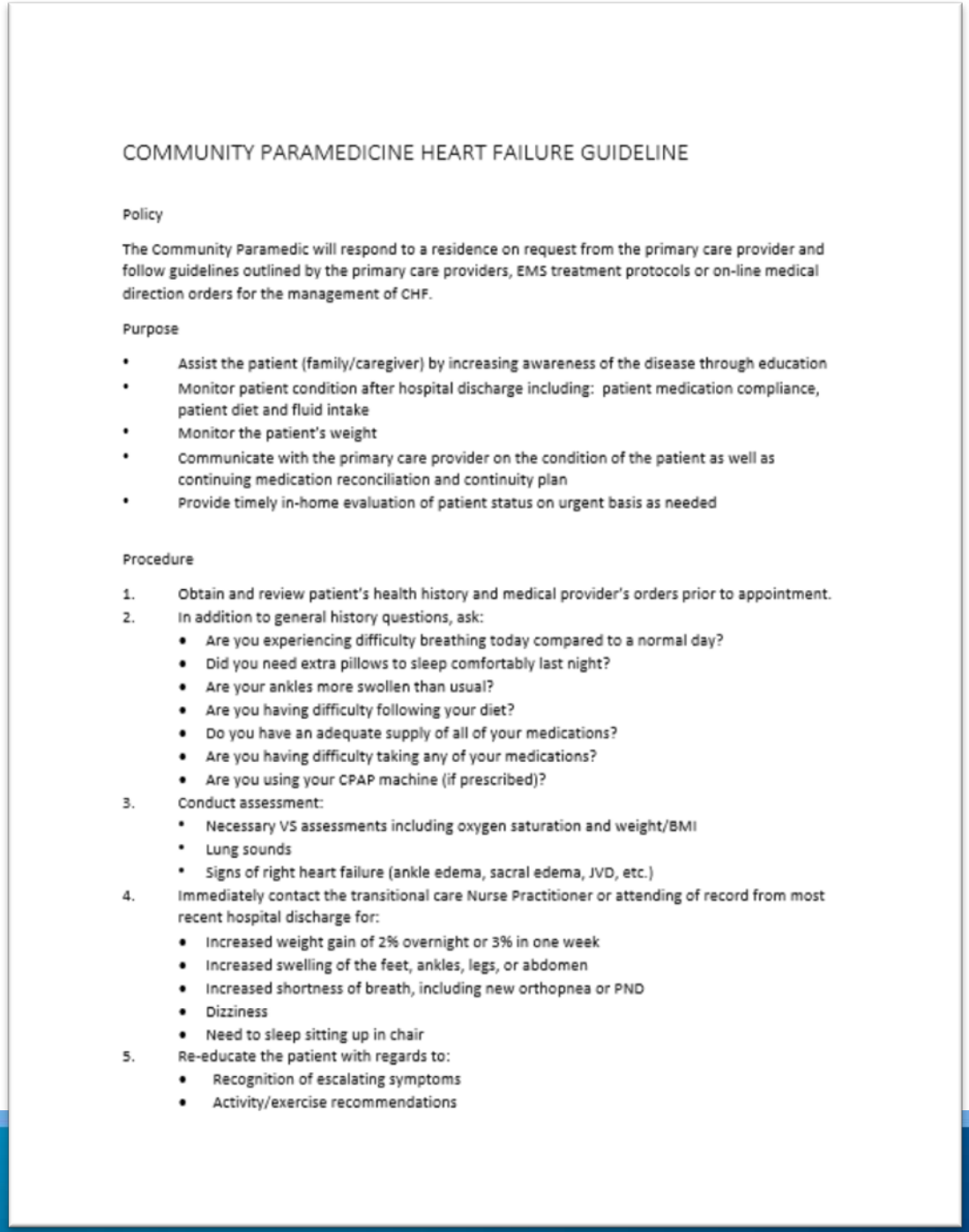
Current Purview

Why Heart Failure?

- EMS familiarity
- Complex disease process
- Impacted by multitude of controllable by challenging factors
- Patients must consume <2000 mg sodium, <64 oz. fluid daily
- Medications change frequently and can be confusing
- Exacerbations often not recognized

Protocols

- Developed with medical direction
- Collaborative effort with partnered service lines
- Adheres to all PA DOH scope of practice parameters



COMMUNITY PARAMEDICINE HEART FAILURE GUIDELINE

Policy

The Community Paramedic will respond to a residence on request from the primary care provider and follow guidelines outlined by the primary care providers, EMS treatment protocols or on-line medical direction orders for the management of CHF.

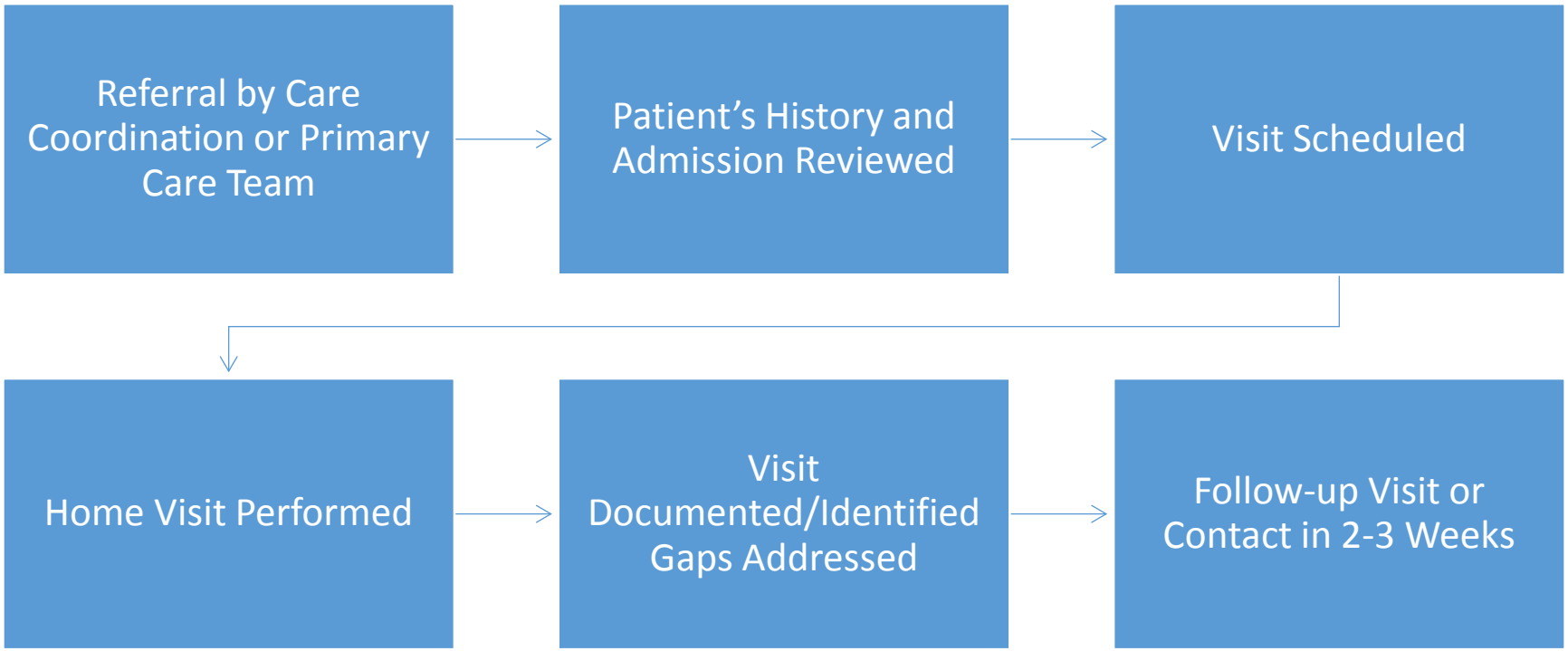
Purpose

- Assist the patient (family/caregiver) by increasing awareness of the disease through education
- Monitor patient condition after hospital discharge including: patient medication compliance, patient diet and fluid intake
- Monitor the patient's weight
- Communicate with the primary care provider on the condition of the patient as well as continuing medication reconciliation and continuity plan
- Provide timely in-home evaluation of patient status on urgent basis as needed

Procedure

1. Obtain and review patient's health history and medical provider's orders prior to appointment.
2. In addition to general history questions, ask:
   - Are you experiencing difficulty breathing today compared to a normal day?
   - Did you need extra pillows to sleep comfortably last night?
   - Are your ankles more swollen than usual?
   - Are you having difficulty following your diet?
   - Do you have an adequate supply of all of your medications?
   - Are you having difficulty taking any of your medications?
   - Are you using your CPAP machine (if prescribed)?
3. Conduct assessment:
   - Necessary VS assessments including oxygen saturation and weight/BMI
   - Lung sounds
   - Signs of right heart failure (ankle edema, sacral edema, JVD, etc.)
4. Immediately contact the transitional care Nurse Practitioner or attending of record from most recent hospital discharge for:
   - Increased weight gain of 2% overnight or 3% in one week
   - Increased swelling of the feet, ankles, legs, or abdomen
   - Increased shortness of breath, including new orthopnea or PND
   - Dizziness
   - Need to sleep sitting up in chair
5. Re-educate the patient with regards to:
   - Recognition of escalating symptoms
   - Activity/exercise recommendations

Clinical Process



Urgent Visits

- Community Paramedicine/EMS can offer the unique ability to provide a timely urgent home visit at the request of a primary care team based on concerns
- CP teams can provide invaluable reconnaissance and interface with the care team in real-time within the home, potentially finding solutions to avoid imminent readmissions or exacerbations

Results

LLEMS Community Paramedicine

Readmission Impact

Source: MIDAS Readmission Standard Reporting

- April 2017-April 2019
- Compares PDX HF patients with CP services vs. those without
- Data extracted from MIDAS Readmission Toolpack reporting
- Verified against Vizient data

Cumulative PDX HF (With CP)			
Month	Readmits	Total Seen	Rate
Apr	1	24	4.17%
May	5	23	21.74%
Jun	2	28	7.14%
Jul	1	17	5.88%
Aug	4	19	21.05%
Sep	2	22	9.09%
Oct	5	22	22.73%
Nov	4	20	20.00%
Dec	2	24	8.33%
Jan	4	23	17.39%
Feb	4	29	13.79%
Mar	2	34	5.88%
Apr	3	24	12.50%
May	3	34	8.82%
Jun	2	24	8.33%
Jul	3	31	9.68%
Aug	3	22	13.64%
Sep	3	21	14.29%
Oct	3	22	13.64%
Nov	4	22	18.18%
Dec	4	19	21.05%
Jan		20	0.00%
Feb	1	22	4.55%
Mar	1	25	4.00%
Apr	1	19	5.26%
Total	67	590	**11.36%**

Cumulative PDX HF (NO CP)			
Month	Readmits	Total Seen	Rate
Apr	4	23	17.39%
May	5	39	12.82%
Jun	14	45	31.11%
Jul	11	34	32.35%
Aug	3	43	6.98%
Sep	13	41	31.71%
Oct	3	31	9.68%
Nov	12	38	31.58%
Dec	13	43	30.23%
Jan	6	24	25.00%
Feb	12	39	30.77%
Mar	10	46	21.74%
Apr	20	50	40.00%
May	6	42	14.29%
Jun	10	30	33.33%
Jul	10	44	22.73%
Aug	12	48	25.00%
Sep	10	48	20.83%
Oct	8	40	20.00%
Nov	15	46	32.61%
Dec	11	43	25.58%
Jan	12	54	22.22%
Feb	14	45	31.11%
Mar	8	53	15.09%
Apr	16	53	30.19%
Total	258	1042	**24.76%**

Cumulative PDX HF (All HMC)			
Month	Readmits	Total Seen	Rate
Apr	5	47	10.64%
May	10	62	16.13%
Jun	16	73	21.92%
Jul	12	51	23.53%
Aug	7	62	11.29%
Sep	15	63	23.81%
Oct	8	53	15.09%
Nov	16	58	27.59%
Dec	15	67	22.39%
Jan	10	47	21.28%
Feb	16	68	23.53%
Mar	12	80	15.00%
Apr	23	74	31.08%
May	9	76	11.84%
Jun	12	54	22.22%
Jul	13	75	17.33%
Aug	15	70	21.43%
Sep	13	69	18.84%
Oct	11	62	17.74%
Nov	19	68	27.94%
Dec	15	62	24.19%
Jan	12	54	22.22%
Feb	14	45	31.11%
Mar	8	53	15.09%
Apr	16	53	30.19%
Total	322	1546	**20.83%**

Normalized Readmission Rates

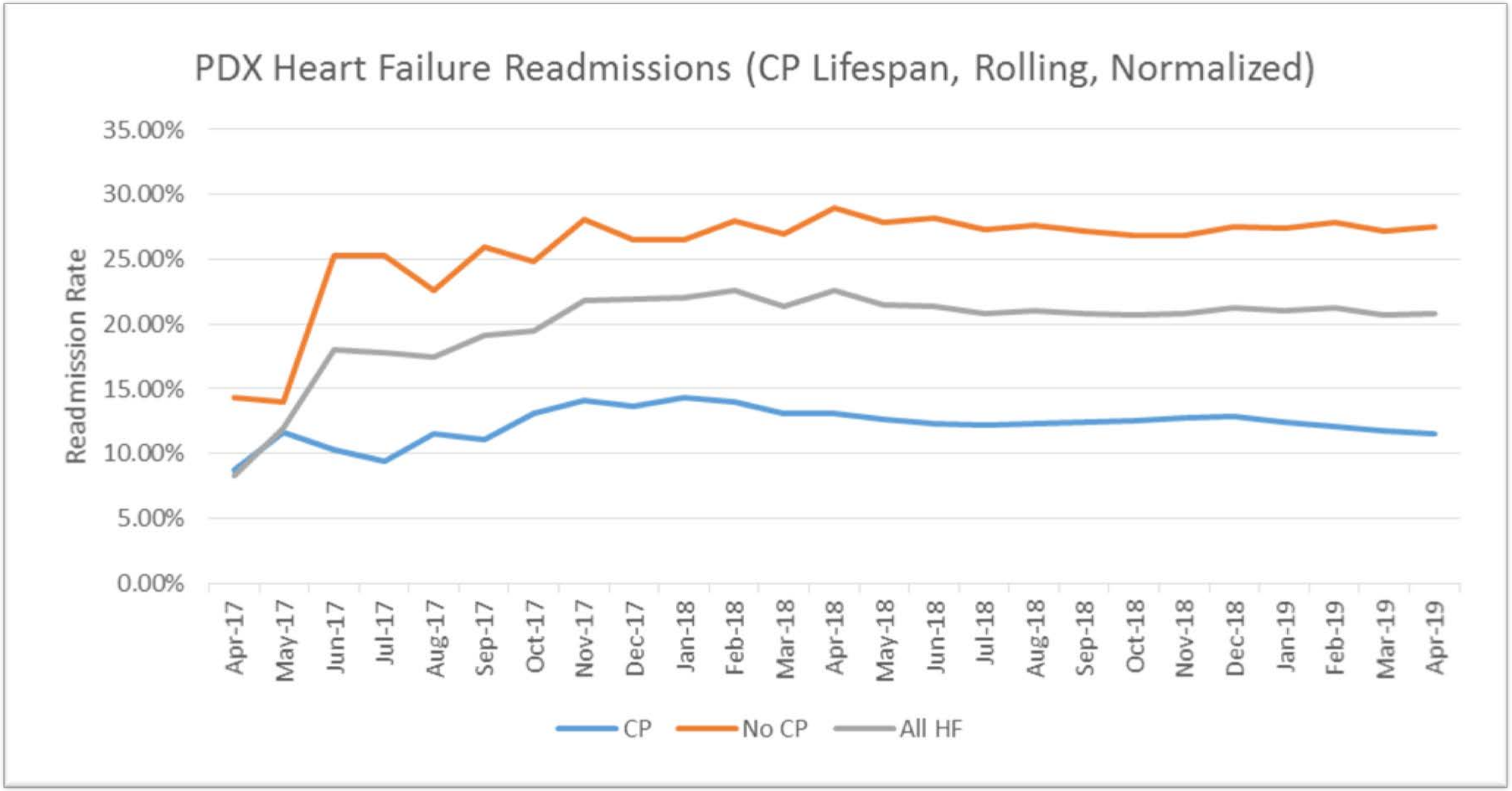
April 2017- April 2019 (CP Program Lifetime)

- Only comparing patients that are 100% valid for Community Paramedicine
- Excludes any post-acute discharges

Source: MIDAS Readmission Standard Reporting/Vizient CDB

PDX HF Apr17-Apr19 (CP, Normalized)			
Month	Readmit	Total	Rate
Apr	2	23	8.70%
May	3	20	15.00%
Jun	2	25	8.00%
Jul	1	17	5.88%
Aug	4	19	21.05%
Sep	2	22	9.09%
Oct	5	19	26.32%
Nov	4	18	22.22%
Dec	2	20	10.00%
Jan	4	20	20.00%
Feb	3	25	12.00%
Mar	2	31	6.45%
Apr	3	23	13.04%
May	3	34	8.82%
June	2	24	8.33%
July	3	30	10.00%
Aug	3	20	15.00%
Sep	3	21	14.29%
Oct	3	21	14.29%
Nov	4	23	17.39%
Dec	3	17	17.65%
Jan	0	20	0.00%
Feb	1	20	5.00%
Mar	1	22	4.55%
Apr	1	19	5.26%
Total	64	553	**11.57%**

PDX HF Apr17-Apr19 (No CP, Normalized)			
Month	Readmit	Total	Rate
Apr	2	14	14.29%
May	5	36	13.89%
Jun	14	33	42.42%
Jul	6	24	25.00%
Aug	4	30	13.33%
Sep	11	25	44.00%
Oct	4	23	17.39%
Nov	14	29	48.28%
Dec	6	35	17.14%
Jan	5	19	26.32%
Feb	10	22	45.45%
Mar	5	29	17.24%
Apr	17	36	47.22%
May	3	26	11.54%
Jun	7	20	35.00%
July	5	32	15.63%
Aug	9	26	34.62%
Sep	5	26	19.23%
Oct	7	32	21.88%
Nov	8	30	26.67%
Dec	12	32	37.50%
Jan	8	31	25.81%
Feb	13	37	35.14%
Mar	6	37	16.22%
Apr	11	33	33.33%
Total	197	717	**27.48%**


PDX Heart Failure Readmissions (CP Lifespan, Rolling, Normalized)
Readmission Rate
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
Aug-18
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
CP
No CP
All HF

Financial Impact Model
Using Cumulative Readmission Rates

LLEMS Community Paramedicine Financial Impact Apr17-April19
(Cumulative Performance)

Financial Impact Model (Cumulative)		
Principle Diagnosis Heart Failure (HF)	With CP (Normalized)	No CP (Normalized)
Total Patients	553	717
Readmission rate	11.57%	27.48%
Readmissions	63.9821	197.0316
Readmissions if opposite applied	151.96	82.96
Potential readmissions prevented	87.98	114.07
Average length of stay	6	6
Bed days saved (Avoided x LOS)	527.89	684.45
Average estimated cost of readmitted bed day	$2,000	$2,000
Impact to direct contribution margin	$1,055,780	$1,368,900

Source: MIDAS Readmission Standard Report using filters established by normalization logic

Source: Normalized readmission rates

Explanation: Readmission rate * total patients

Assumption that the 28% would have been true for the 340 patients seen by CP if CP was not involved

Explanation: Difference between readmissions and opposite readmission rate

Source: Vizient

Explanation: 6 days * Potential prevented readmissions

Source: Finance*

Explanation: $2,000 * bed days saved

*Cannot share specific figure. This is a theoretical value based on historical bundled readmission costs that demonstrate principle

Notes

- Only includes principle diagnosis heart failure patients
- Does not yet include stroke or VAD groups
- Unaccounted for potential financial impacts:
  - Commercial payer quality incentive programs
  - Federal quality/Pay-for-value programs
- Program expenses: $363k

What's gone well

- Highly constructive collaborative health system process integration
- Analytical resources
- Consistently positive results
- Leadership support
- Increasing appeal to wider health system and payers
- ***Highly motivated, compassionate, and adaptable paramedic staff***

What hasn't gone so well

- Complex referral process
- Identification of truly "principal diagnosis" patients difficult
- Lack of universal understanding regarding paramedic scope-of-practice
- Shifting business realities

The Future of Community Paramedicine

- Expanding local programs
- Identifying additional areas of impact
- Payer recognition and partnerships
- National recognition (ET3)
- Integration in pre- and post-hospital processes

Questions?

Thank You!

References

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