



Tompkins County Council of Governments (TCCOG) Emergency Medical Services Task Force (EMS-TF)

PADM 5900 — Final Research Presentation

Presented by

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André Hook, MBA / MHA Candidate

May 9, 2017



PROJECT TEAM

OUR PROJECT TEAM is enrolled in the **Cornell Institute of Public Affairs (CIPA) Course “Non-Profit and Government Consulting;”** to foster a new skill set and engage Tompkins County to make an impact



Quetrell Heyward
MD/MBA Candidate



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MHA Candidate



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AGENDA

Agenda

- Introduction
- Project Overview
- Project Methods
- Project Findings
 - Volunteer Strategies
 - EMS Best Practices
 - Tompkins County Current State
- Project Opportunities
- Recommended Next Steps
- Discussion



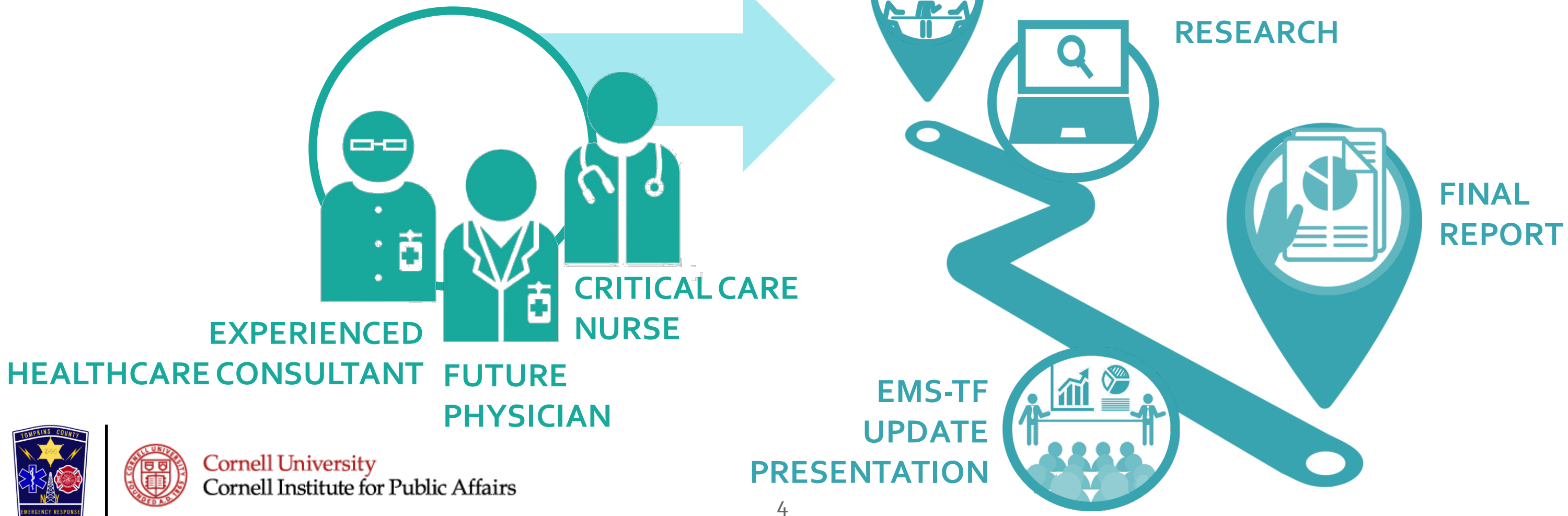
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Agenda

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____

THE CORNELL INSTITUTE OF PUBLIC AFFAIRS (CIPA) operates within the College of Human Ecology and challenges students to apply our knowledge to real-world clients and situations

TO THAT END OUR TEAM WORKED TO BRING OUR RESEARCH TO APPLICATION



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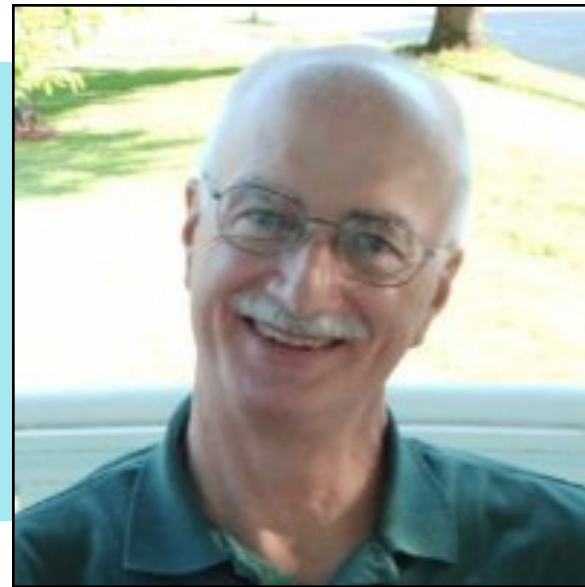
PROJECT TEAM

TOGETHER WITH THE STEERING COMMITTEE of the **Tompkins County Council of Governments**
Emergency Medical Services Task Force we worked on phase one of a three phase project



Lee Shurtleff

Dept. of Emergency Response
Director, Fire and
Emergency Response



Brian Wilber

Dept. of Emergency Response
Assistant Director, Dispatch
Operations



Dan Klein

Legislator, District 7



Irene Weiser

Co-Chair of TCCOG
Councilwoman, Caroline



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Project Overview

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TOMPKINS COUNTY COUNCIL OF GOVERNMENTS EMERGENCY MEDICAL SERVICES TASK FORCE

engaged our student consulting team toward the goal of addressing EMS opportunities in the county

The TCCOG EMS-TF is charged with developing methods and strategies to ensure adequate and optimal emergency medical response and transport for those in Tompkins County.

What are the challenges?

- Need for a solid current state assessment to understand cost and sustainability of EMS
- Desire to balance opportunities for shared services with hesitation to remain independent
- Issues surrounding education of the public on urgent versus emergency care to reduce demand

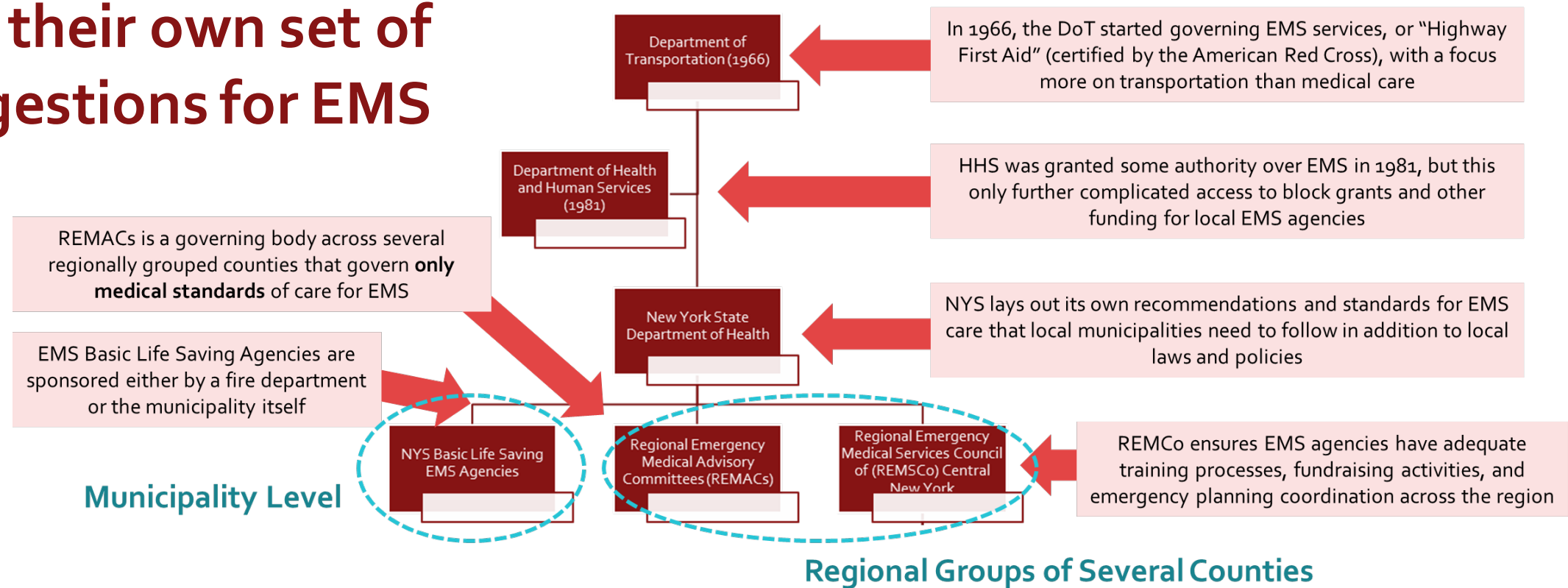
Who are the stakeholders?

- 15** taskforce members made up of various elected officials, community members, and relevant professionals
- 100k** Tompkins County residents
- 16** municipalities with varying degrees of resources available for supporting ambulance services



TOMPKINS COUNTY IS NOT ALONE: the historical context of EMS development in this country has contributed to disparate reimbursement, training, and cost of providing these life-saving services

Distinct agencies at the federal, state, regional, and local levels each provide their own set of guiding suggestions for EMS



KEY THEMES were identified to help guide our team and the EMS-TF Steering Committee to understand, assess, and establish a “vision” for the future of Tompkins County EMS

INITIAL NEEDS

- To distinguish the regulatory framework and state-level priorities that will influence future EMS
- To identify recruitment and training strategies
- Best practices used across the US to ensure timely and competent services; assess fit for application to Tompkins County community

PROJECT VISION

FUTURE NEEDS

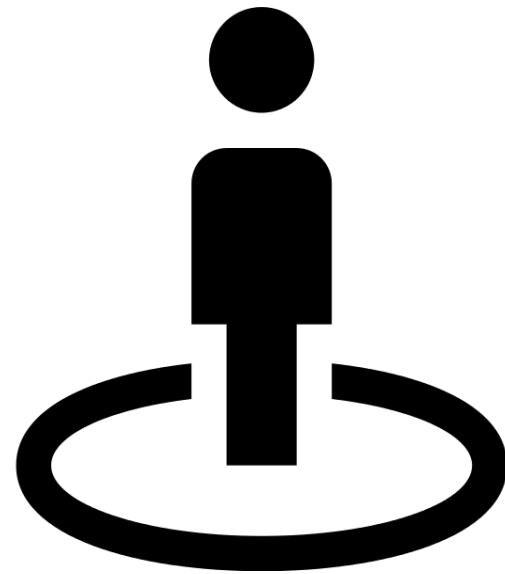
- To inventory EMS resources countywide
- To understand costs associated with each town’s EMS service and how first responder services are covered
- Ways to meet needs of all residents in the city and rural areas of Tompkins County
- Recommendations for improvement including cost implications



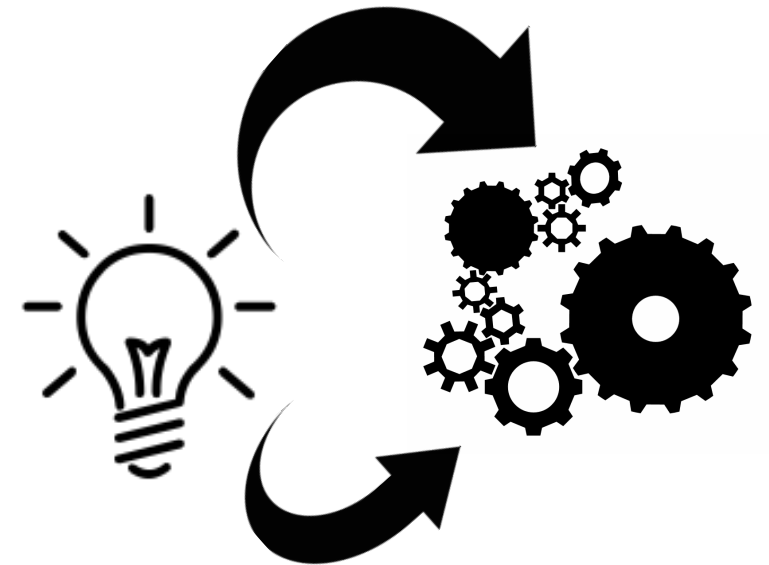
WITH CONTINUED ENGAGEMENT WITH THE CIPA CLASS, the steering committee envisions three phases; ensuring continued progress was a major focus for the consulting team



Research Phase
Spring 2017



Current State Phase
Fall 2017



Implementation Phase
Spring 2018



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At the onset of the project, our team identified several tasks to work toward; along with the steering committee we prioritized task for this first phase



Facilitate task force steering committee meetings

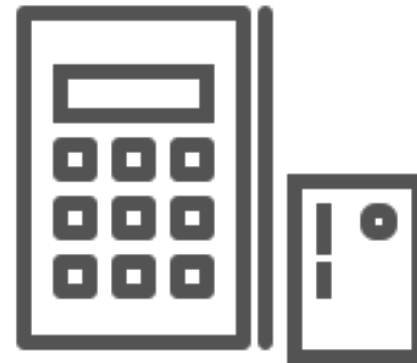
Attend EMS-TF meetings



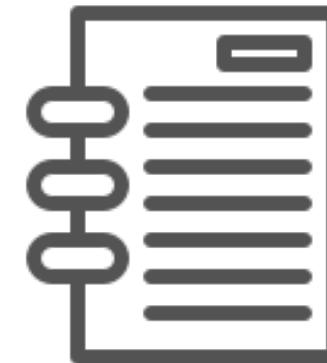
Review and summarize initiatives provided by the EMS-TF



Research public data sources
Identify best practices
Identify volunteer strategies



Devise a menu of recommended activities for future project phases



Compile a final report of findings for use of the fall 2017 semester CIPA team

**PHASE II
ACTIVITIES**



Stakeholder interviews

Complete hotspot analysis to determine best locations for first responders and/or ambulances

Calculate cost implications for all recommended models



BI-WEEKLY STEERING COMMITTEE MEETINGS allowed our team to build iterations of research to best apply to Tompkins County's needs



RESEARCH METHODS

For our initial literature review we dove into three major topics: EMS best practices, volunteerism strategies, and any regulatory impacts of both

- Limited our search to literature published within the past 12 years
- Cast a wide net in order to educate ourselves on the topic, but then focused on EMS models serving similar demographic areas with comparable resources
- Identified a variety of sources spanning scholarly articles, newspaper articles, manuals, public law documents
- Obtained sources across each research objective; and identified further topics for future study



Project Findings

- **Volunteerism Strategies**
- EMS Best Practices
- Tompkins County Current State

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PROJECT FINDINGS – VOLUNTEER STRATEGIES

The literature cites multiple factors that should be considered when approaching recruitment and retention in EMS organizations

TRAINING REQUIREMENTS




STRESS AND BURNOUT



SCHEDULING ISSUES

X

 **Schedule Conflict**
Would you like to proceed anyway?

FINANCIAL INCENTIVES



ADVANCEMENT OPPORTUNITIES



COMMUNITY INTEREST





60.1%

of community members
lack time to volunteer

57.7%

of communities experience
a lack of certified EMTs or
paramedics in the area

52.9%

of community members
are not interested in
volunteering

RECRUITMENT

According to the study, 79% of rural respondents found EMT recruitment to be at least sometimes an issue with 44% finding recruitment a continuous problem



PROJECT FINDINGS –
VOLUNTEER STRATEGIES



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44.1%

of training programs are
too long

32.0%

of training programs are
too far away

25.0%

of training programs are
too expensive

TRAINING

The study also demonstrated that training requirements are a major barrier to volunteer EMT recruitment





65.8%

of volunteers report
time or scheduling
conflicts as a barrier

42.4%

of volunteers report feelings
of burnout or job stress

40.8%

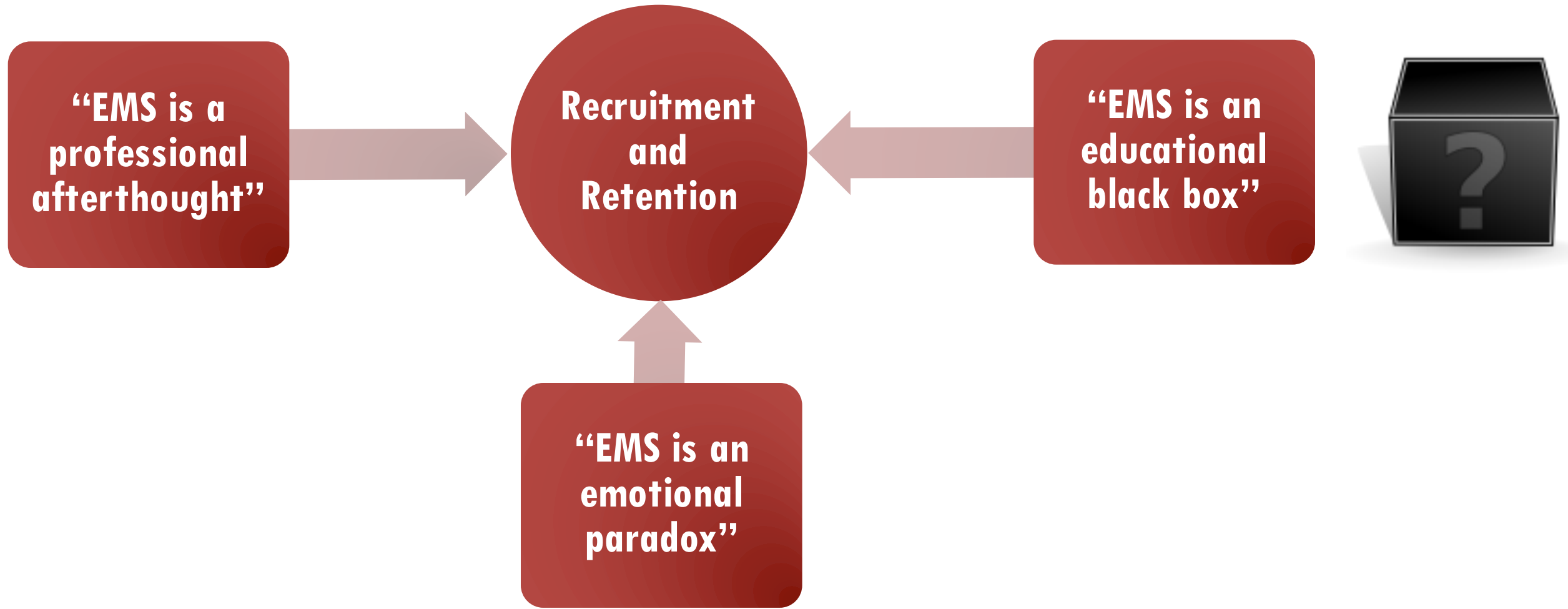
of volunteers report
difficulty meeting
continuing ed. requirements

RETENTION

The study also showed that **76.8%** of respondents found EMT retention to be at least sometimes a problem with **21.6%** finding retention to be a constant issue



Another approach to looking at volunteerism involves obtaining more qualitative data to identify factors that contribute to recruitment and retention



SUMMARY: Several patterns emerge in the literature discussing the issues surrounding recruiting and retaining volunteers in EMS agencies



Joining the profession is often a secondary option



Training logistics impede volunteer recruitment



Lack of clear CME requirements create false expectations



Volunteers' health concerns provide major barriers to retention

Notes: CME = Continuing Medical Education



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Project Findings

- Volunteerism Strategies
- **EMS Best Practices**
- Tompkins County Current State

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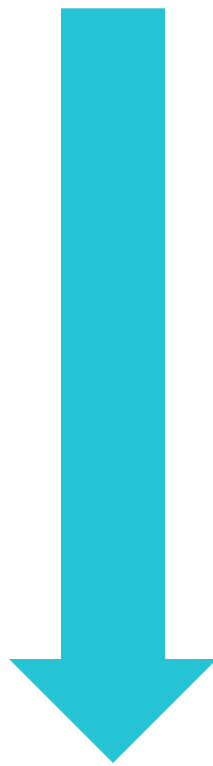
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The literature reveals three major goals driving best practice models for emergency medical services' first responder staff

HOW CAN WE?



REDUCE DEMAND



ENSURE QUALITY



REDUCE COSTS

**PROJECT FINDINGS –
EMS BEST PRACTICES**

One study examined communities in another DSRIP state under a 1115(a) Medicaid Transformation Waiver and demand reduction through improving community care coordination



**THREE RURAL
COMMUNITIES**
State of Texas
2013 – 2016

**Strategy mirrors those
of paramedicine —
medicine, public health,
and public safety**

**Another study in a NYS, also a
DSRIP state, community explores
the reasons for EMS demand issues**



**VILLAGE OF
GENESEO**
State of New York
2004 – 2007
(two six month studies)

**PATIENTS REPORTED HAVING IMPROVED ACCESS TO
HEALTHCARE SERVICES, INCLUDING:**



- Connections to primary care providers, dentists, mental health providers, other specialists
- Health insurance, medication, and medication assistance

**70% were first-time
users, 30% were
“frequent flyers”**

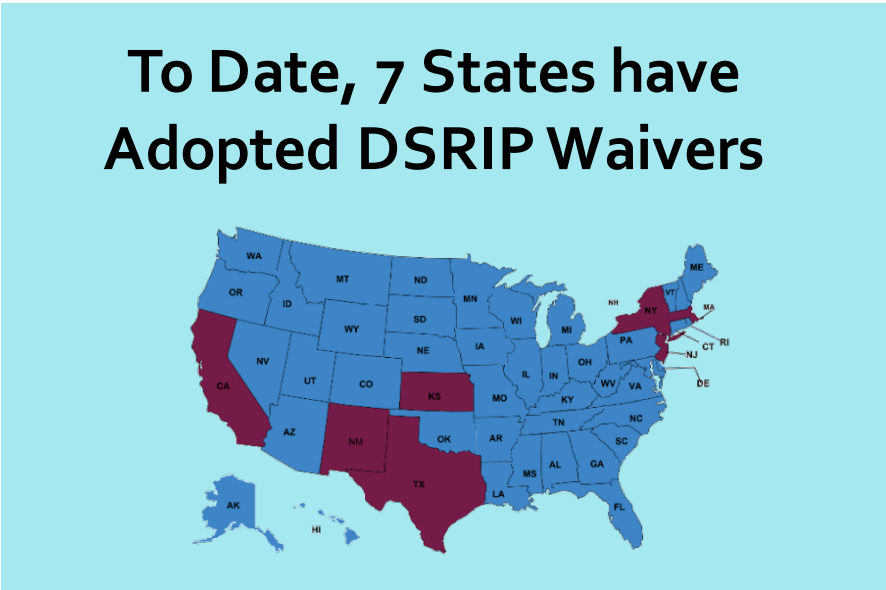


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PROJECT FINDINGS –
EMS BEST PRACTICES

So what is DSRIP?

- Not a grant program, but an **incentive-based payment program**
- The payments received are not service payments. These are **earned bonus payments**. If you reach the project benchmarks then you will receive the payments.
- Performance requirements and benchmarks vary by state but follow the general framework while following the four main areas below:



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CASE STUDY: Allina Health EMS & Montgomery County reallocated paramedic staff to community care coordination in addition to emergency response



PILOT GOALS

- EMS prevention, patient coaching, as well as patient navigation
- Home visits to educate potential EMS patients how to access the healthcare system

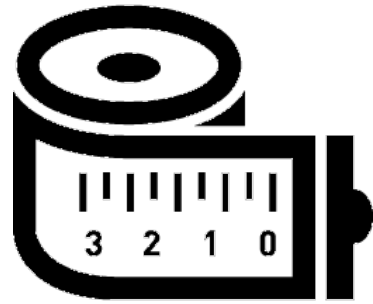
PILOT RESULTS

- 30-day readmission rates reduced to 5% — 207% less than the national average of 18.4%
- 50% reduction in calls
- Among those who were high-frequency EMS users, 78% were successfully prevented from readmission



The literature focuses on achieving three goals, to identify demand zones, reduce maximum response distances, and minimize the number of uncovered demand zones

ON WHICH CRITERIA SHOULD WE MEASURE THE SUCCESS OF OUR EMS MODEL?



Current models are biased toward ambulance services in more densely populated areas, resulting in higher times for those located in more rural areas

A PROPOSED BI-OBJECTIVE APPROACH ACCOUNTS FOR THIS BIAS

- Use 9 minutes as a target baseline for urban settings
- Use statistical analysis based on coverage, equity, and outcomes to determine best locations
- Account for busy vehicles in vehicle census analyses – emergencies cannot be forecasted



PROJECT FINDINGS – EMS BEST PRACTICES

Along with the bi-objective model, the literature also proposes a statistically driven simulation model approach to EMS tracking quality



ST. JOHN AMBULANCE SERVICE
Auckland Region, New Zealand
1997

METHODS

- Partnership with Cornell's Engineering School
- Installed buttons in ambulance and in call centers to record timestamps of the delivery process steps

RESULTS

- Development of decision support tool using GIS and simulation "tracing" to optimize ambulance dispatch

OPPORTUNITIES FOR FURTHER STUDY

United Network for Organ Sharing (UNOS) model for projecting "arrival" times is suggested for further study into applicability for operational modeling in EMS

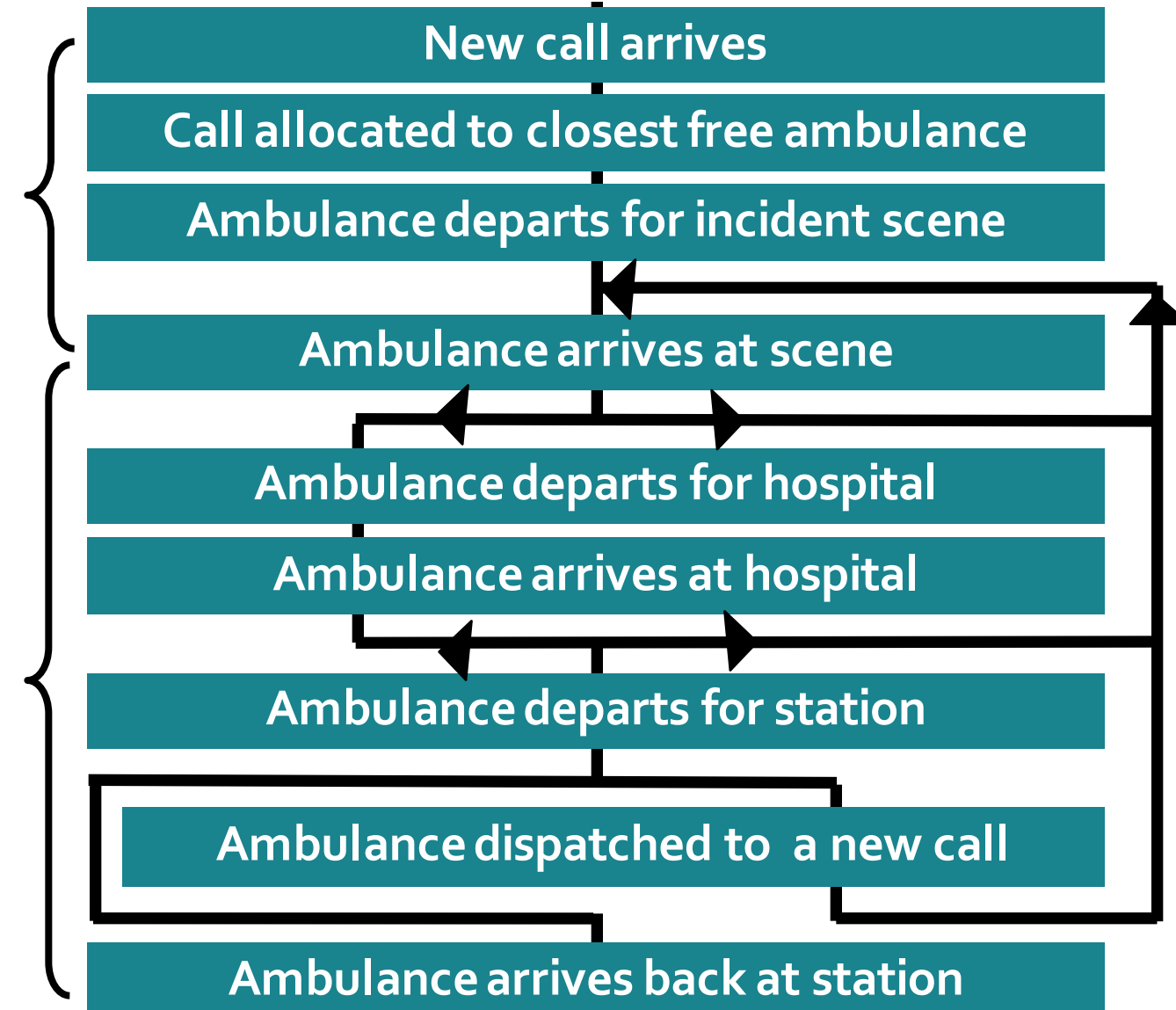


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Dispatch and Service Delivery Process

RESPONSE TIME

SERVICE TIME

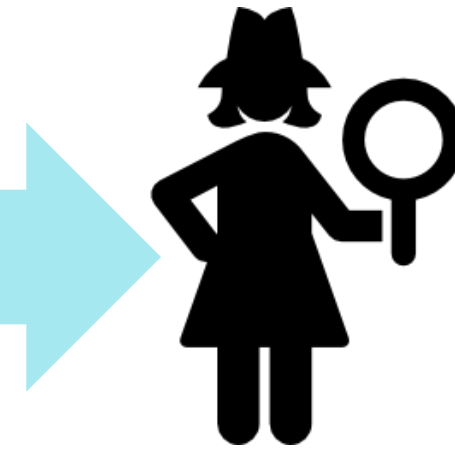


Additionally, the literature identified evidence of how staffing models can maintain quality and improve cost containment and demonstrate underlying value of including other tiers of responders



STAFFING COST ISSUES

- Paramedic salaries and training resources are costly
- Paramedics are NOT necessarily required for every call



FINDINGS

- 3+ paramedics at the scene of out-of-hospital cardiac arrests is not associated with improved survival to hospital discharge when compared to crews with 2 paramedics
- **Opportunity for future study to determine the potential cause of this finding**

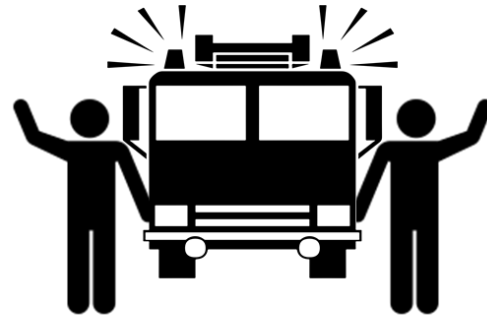


Finally, several case studies on costs associated with fire and emergency services in New York State suggest that community alliances contribute to reduced spending and overall savings



UNIFORM FIRE PROTECION

**North Greensbush and
Defreetsville**
reduced municipal costs
of \$22 per household



SHARED EQUIPMENT

**City of Watervliet and
the Village of Green
Island**
one-time savings of
\$792,000 for Green Island
taxpayers and \$67,000 for
Watervliet taxpayers.



REGIONAL COORDINATION

Albany County
single public-safety
answering point. This
scenario will produce cost
savings of over six million
dollars – \$6,221,775



Successful implementation can not be completed without proper measurement and reporting; national literature suggests that data collection, benchmarking, and quality are inconsistent

WHILE

88% of states have a state EMS Data System

ONLY

50% have statewide coordination without local implementation

ONLY

30% of states are able to track 911 calls requesting EMS services

HOWEVER, IMPLEMENTING THIS STRATEGY IS NOT WITHOUT ITS CHALLENGES

- Quality and consistency benchmarks are inconsistent across settings
- National and local outline issues related to quality of care, lack of quality metrics, fragmentation, and limited evidence-based practice
- Standardizing data collection is a common goal
- Review of policies and procedures as well as historical data can shed light on whether the measurements are reliable and valid
- A simple checklist to ensure certain protocols are followed has improved outcomes and reduced complications
- An open, non-punitive risk management feedback model found to improve both quality and culture



Finally, our CIPA team believes that developing a shared vision for EMS in Tompkins County will be an important goal in the next phases of this project



“The only visions that take hold are shared visions—and you will create them only when you listen very, very closely to others, appreciate their hopes, and attend to their needs.”



SUMMARY: Several categories of best practices emerge in the literature to provide a myriad of ideas for addressing EMS in rural communities



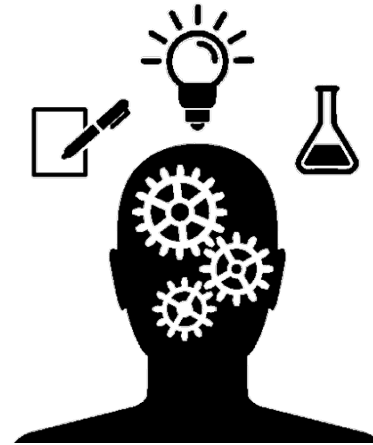
**Care
Coordination**



**Quality
Implications**



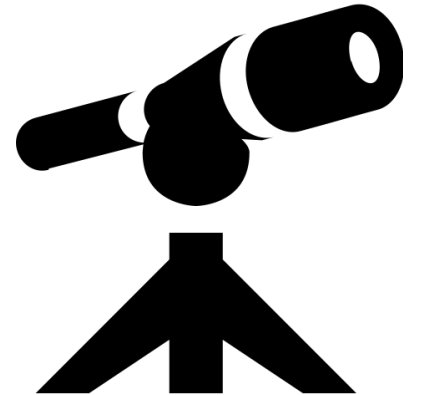
**Staffing
Ratios**



**Operational
Implications**



**Cost
Implications**



**Shared Vision
and Culture**

Project Findings

- Volunteerism Strategies
- EMS Best Practices
- **Tompkins County Current State**

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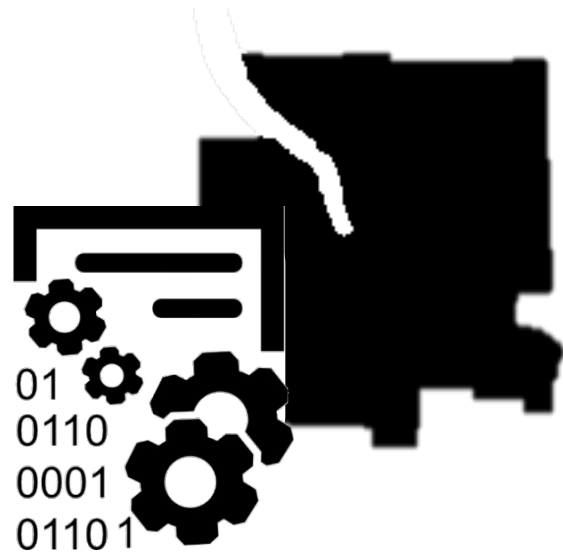
Next
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**PROJECT FINDINGS –
TOMPKINS COUNTY CURRENT STATE**

As part of this project, the CIPA team wanted to set the Phase II team up for success; to that end we summarized the EMS Task Force meetings that we attended during the project

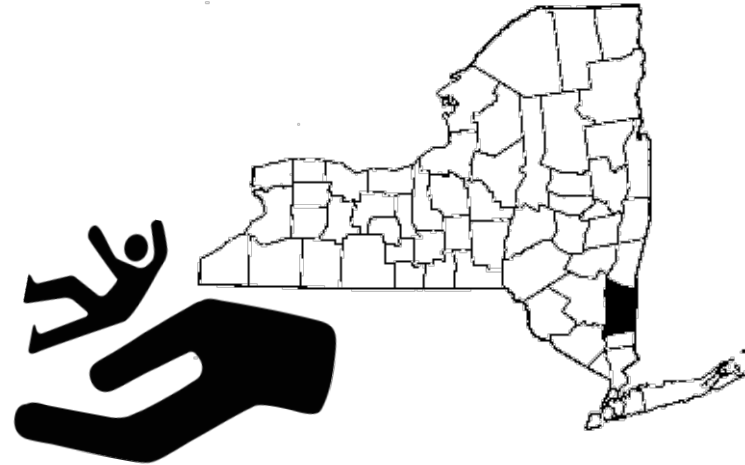


**TOMPKINS COUNTY
EMS TODAY**

WEDNESDAY MARCH 8th

Lee Shurtleff

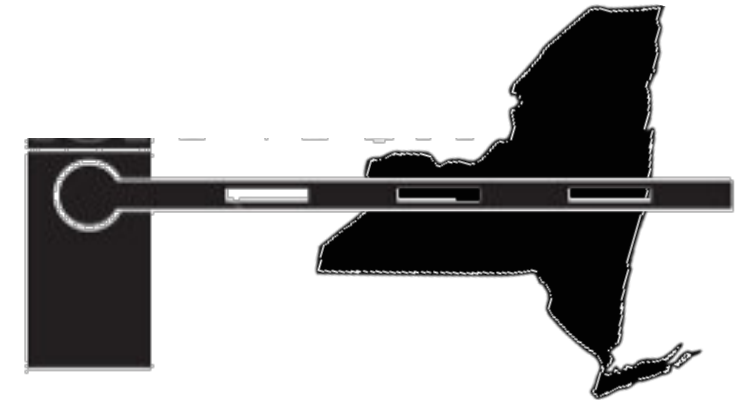
**Dept. of Emergency Response
Director, Fire and EMS**



**DUTCHESS COUNTY
FINDINGS DISCUSSION**

WEDNESDAY MARCH 22nd

Taskforce Discussion



**INTER-STATE AND
MUNICIPALITY EMS POLICIES**

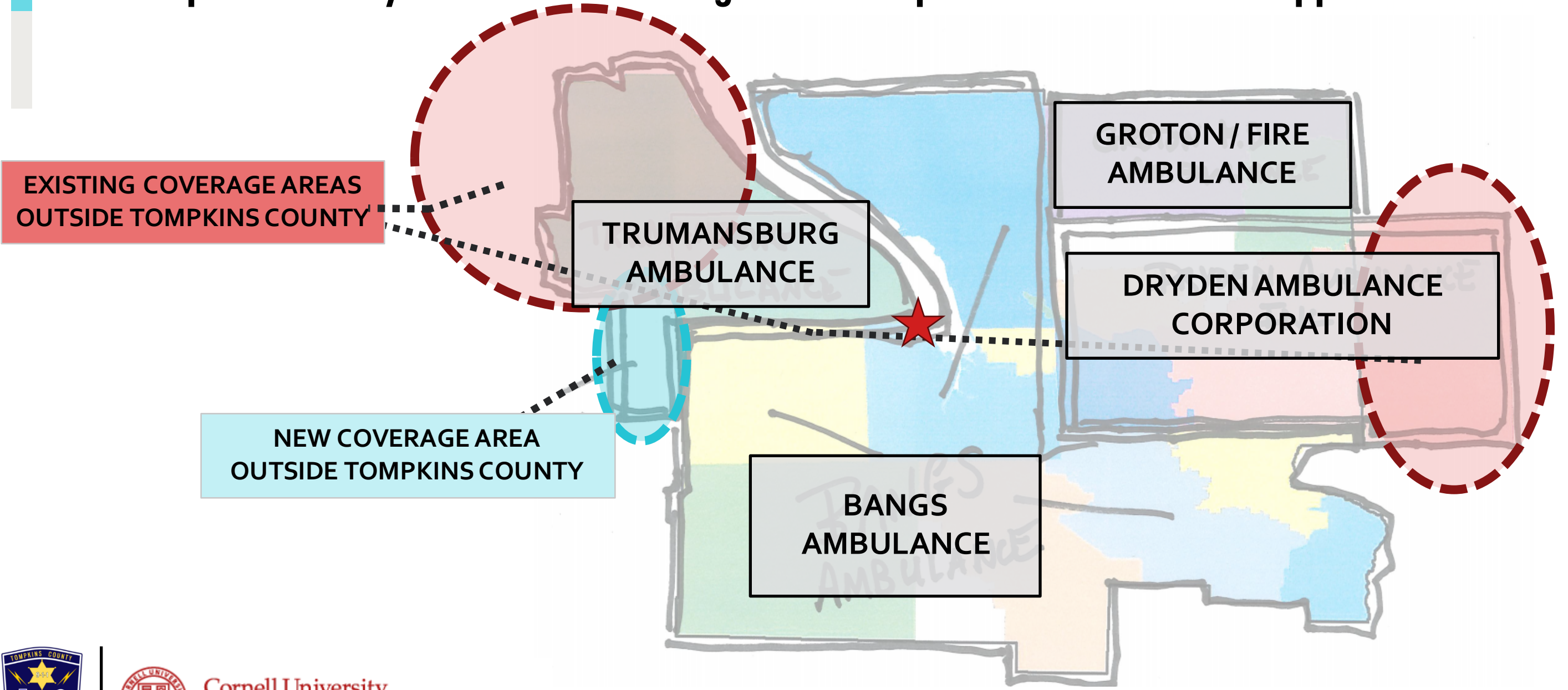
TUESDAY APRIL 11th

**Susie Surprenaut
Executive Director
Central NY Emergency
Medical Services**



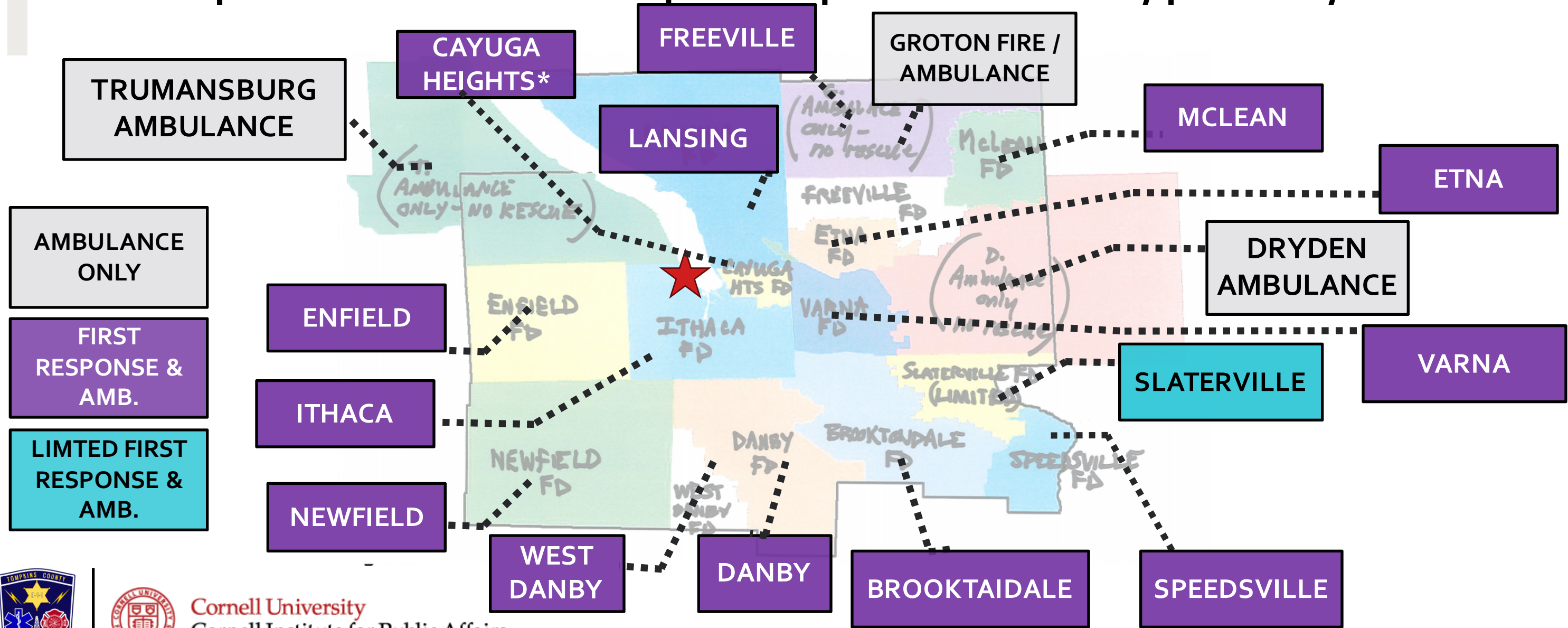
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In Tompkins County four ambulance organizations provide advance life support



**PROJECT FINDINGS –
TOMPKINS COUNTY CURRENT STATE**

However, the EMS structure in Tompkins County is currently much more than ambulances, but also incorporates an extensive first response component that is heavily provided by volunteers



Additionally, we have included in our report much of the work that Lee Shurtleff and others have compiled to provide context to the CIPA team to follow us



Tompkins County is aging just like the rest of the nation.

From 2000 to 2010, the TC population ages 60 and over grew 34%; and the 4.3 working age adults per retired (age 65+) adults in 2010 is projected to fall to 3.2 by 2020.



Elderly EMS users anecdotally do not always require a trip to the Emergency Department when dialing 9-1-1.

Paramedicine services provided by Northwell Health, one of the largest health systems in the nation, shows promise in urban environments.

Translation to a rural environment will be critical.



Past EMS projects between the Johnson School at Cornell University and TC EMS provide a baseline profile of Cornell University EMS (CUEMS).

In addition, the assessment explores the potential for a larger partnership with the Tompkins County Emergency Services.



One study of Erie County, NY Fire Services demonstrates that volunteer models for critical community services like fire and EMS may be more costly in the long run than paid models.



**PROJECT FINDINGS –
TOMPKINS COUNTY CURRENT STATE**

The aging population of Tompkins County presents challenges not unique within the nation; a better understanding of the current state in the county can best guide best practice adoption

“90% want to stay in Tompkins County”

2.7 persons for every 1 person of retirement age in 2030

Lack of care and companionship are issues for older adults in many rural communities, including Tompkins County

TOMPKINS COUNTY POPULATION TRENDS

Source: US Census and Cornell Program on Applied Demographics

<u>Year</u>	All Ages	Ages 0 - 59	Ages 60 - 64	Ages 65 - 74	Ages 74 - 84	Ages 85+
2000	96,501	84,534	2,710	4,637	3,368	1,252
2010	99,161	85,522	2,710	5,711	3,421	1,797
2020	101,916	82,699	5,113	8,452	3,947	1,705
2030	103,663	81,303	4,929	9,720	5,756	1,955
2040	98,606	80,059	3,838	6,526	5,462	2,721



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Project Opportunities for Further Study

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PROJECT OPPORTUNITIES – SUMMARY

Overview of Opportunities



MARKETING STRATEGIES



VOLUNTEER BURDENS



ESTABLISH PARTNERHIPS



ENGAGE STUDENTS



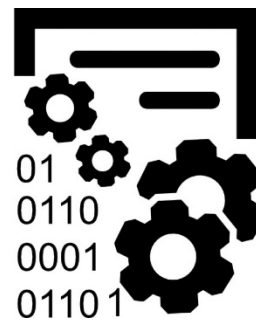
DISTANCE LEARNING



SHARED VISION



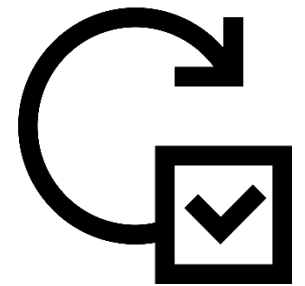
CARE COORDINATION



DATA TRACKING & REPORTING



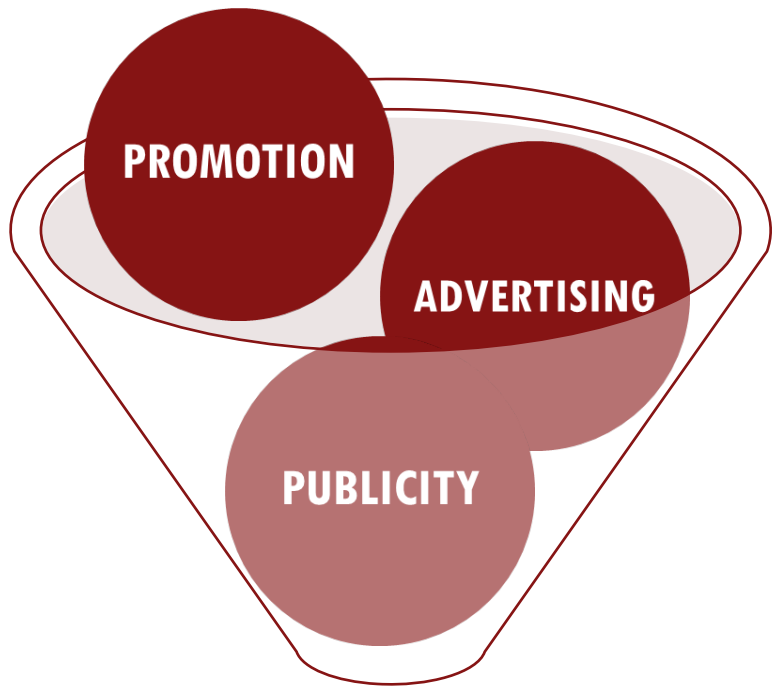
FUNDING SOURCES



MAINTAIN INFORMATION



Marketing strategies may be helpful in increasing public awareness, education, and other municipal agencies having to do with EMS



IMPROVED VOLUNTEERISM

Notes: PSAs = Public Service Announcements

ADVERTISING

- PSAs
- Billboards
- Radio Ads
- Newspaper Ads

PUBLICITY

- TV News Coverage
- Newspaper Coverage
- Magazine Coverage
- Newspaper Ads

PROMOTION

- Public Displays
- Educational Forums
- Community Simulations
- Local Fundraisers

**PERSONAL
SELLING**



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PROJECT OPPORTUNITIES – VOLUNTEER STRATEGIES

High school EMS programs have shown great promise with respect to increasing interest and improving volunteerism among younger generations



Rancho High School constructed a one-year EMS course typically taken by high school seniors that prepares them to take the NREMT exam at the year's end



Pima County JTED organized a class similar to Rancho High School; however, this course is not offered within the high school but at a separate vocational school



Hoboken High School utilizes a longitudinal approach that is spread across a student's four years in high school that results in them becoming a state-certified EMT

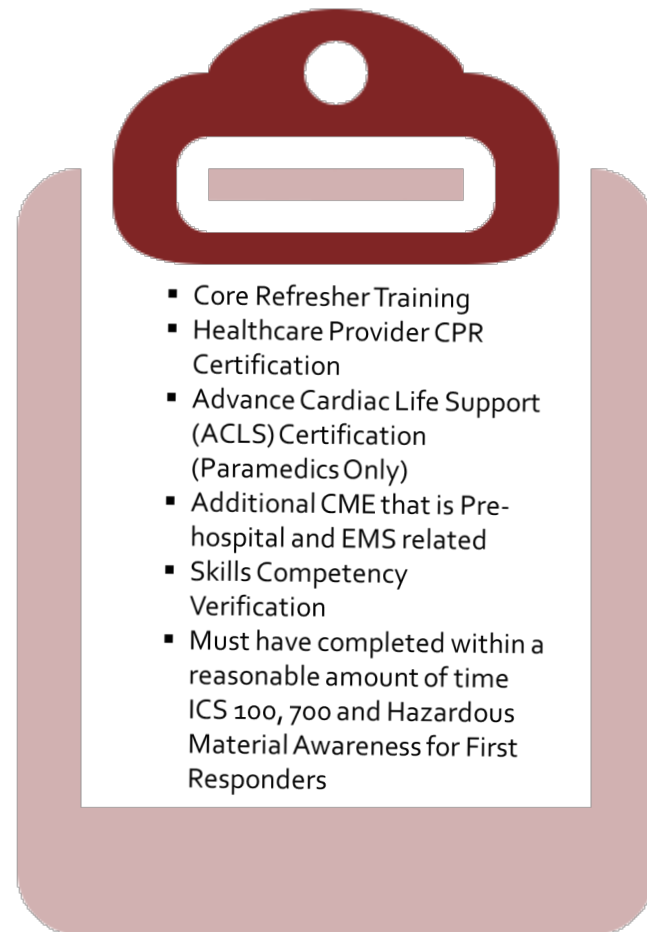
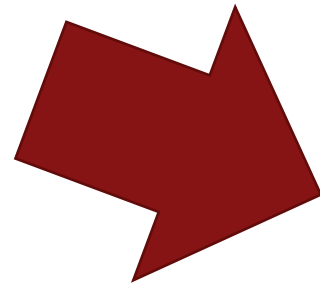
New York State EMS policies and requirements for volunteers do not necessarily correlate with those of fire services and allow for volunteers under the age of 18 if they are CFR certified. There are also no restrictions on place of residence which allows certified EMTs to volunteer in any municipality.



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Continuing education requirements are cited as a major impediment to retention and suggests “self-study” methods as a potential solution for volunteers

To renew certification a provider must complete several continuing medical education (CME) requirements



NYS has approved that 50% of the total core and additional CME hours may be done through self-study

- videos/CDs
- internet training courses
- Additional self-study hours are allowed with an approve state waiver application

Stress-relief programs have proven to be helpful when battling against depression, anxiety, PTSD, and other mental health disorders that reduce volunteer retention



- EAPs offer more formal support with therapists, psychologists, and other mental health professionals
- CISM programs are generally peer driven and offer general educational sessions as well as debriefing and assistance following stressful events

CISM Critical Incident
Stress Management





The National Volunteer Fire Council (NVFC) has put forth and implemented recommendations that can be used to help increase recruitment and retention

Incorporate a wellness program with the help of the Heart-Healthy Firefighter program

Utilize Fire Corps to help recruit non-operational volunteers

Take advantage of the National Junior Firefighter program

Make use of the 1-800-Fire-Line phone number to increase recruitment

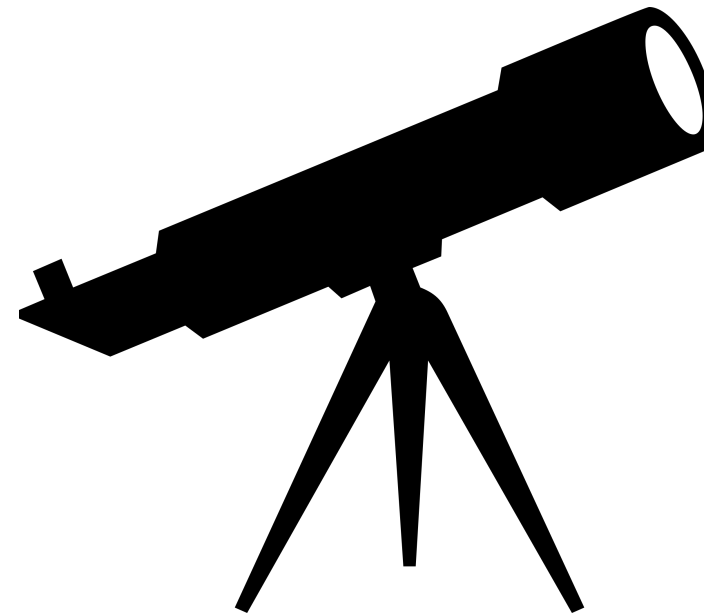


The most immediate opportunity is to form a small Advisory Group to guide EMS once the taskforce has implemented its chosen solutions

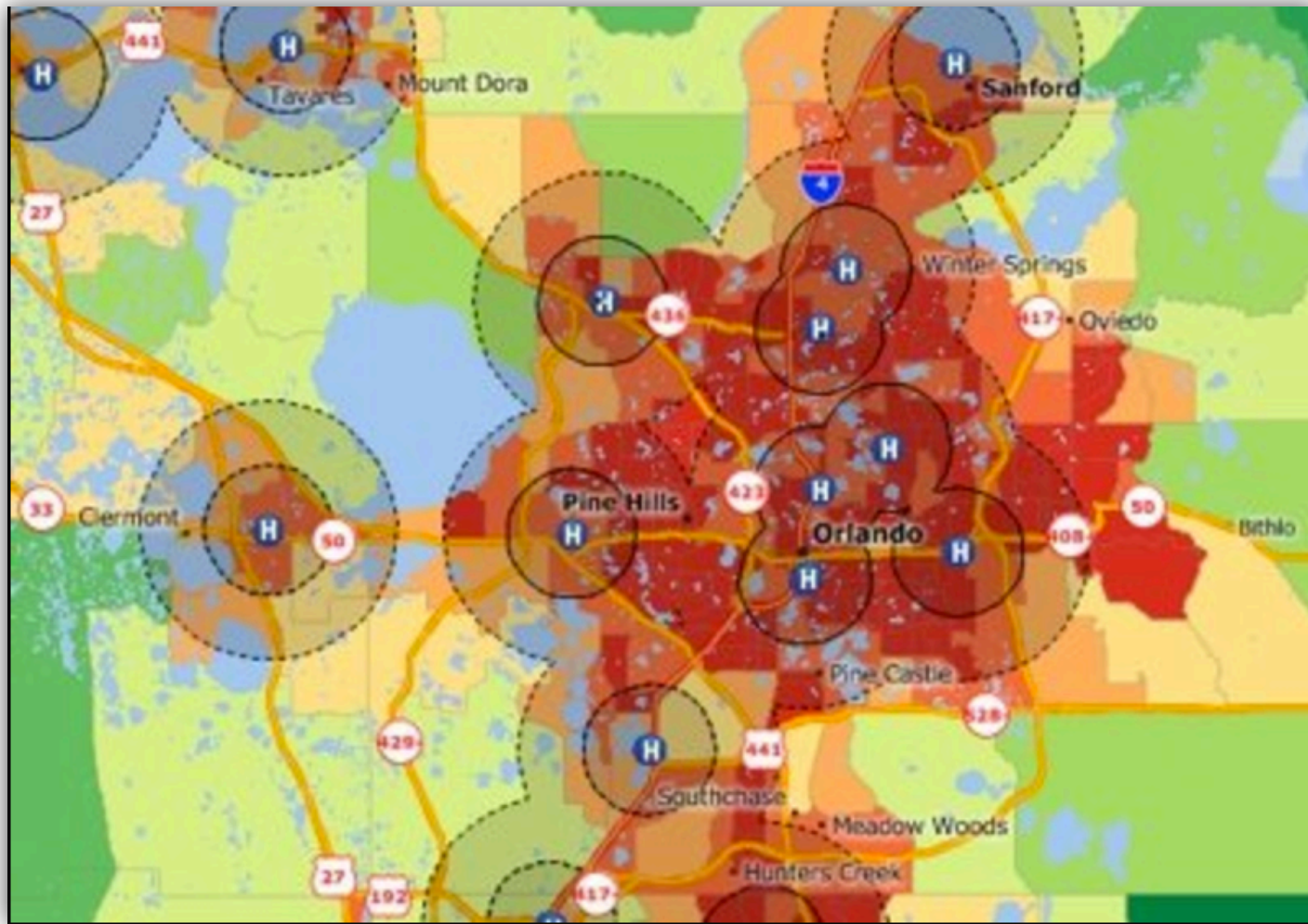
WHO SHOULD BE ON THE ADVISORY GROUP?

- Director
- County Representatives including finance and billing, county operations, fire, EMS
- Medical Representatives including a Medical Director, mental health, substance abuse and addiction
- Tompkins County Citizens Representative
- Stakeholder to guide volunteer recruitment and retention

**Shared vision to ensure
that each action leads
toward that vision**



Strategic collection, analysis, and management of operational data helps to guide quality improvement initiatives



- Determine metrics and standards to be utilized
- Identify high demand zones through data
- Utilize Hypercube operations model
- Get creative – Idle locations, GPS tracker

PROJECT OPPORTUNITIES – EMS BEST PRACTICES

Furthermore, remaining educated on EMS opportunities will be an important task for an advisory group

- Monitor for status reports quarterly
- Attend conferences when possible
- Review grant opportunities at least twice per year



STATE-LEVEL GRANTS

- Statewide Interoperable Communications Grant (SICG New York)
- Personal Responsibility Education Program (PREP New York)

FEDERAL-LEVEL GRANTS

- Evidence-Based Falls Prevention Programs
- Promoting Integration of Primary and Behavioral Health Care
- Enhancing Innovation and Capabilities of the Environmental Public Health Tracking Network

CORPORATE OR FOUNDATION GRANTS

- Global Ideas for U.S. Solutions (Robert Wood Johnson)
- Healthiest Cities & Counties Challenge (Aetna)



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Next Steps

Project
Team

Project
Overview

Project
Methods

Project
Findings

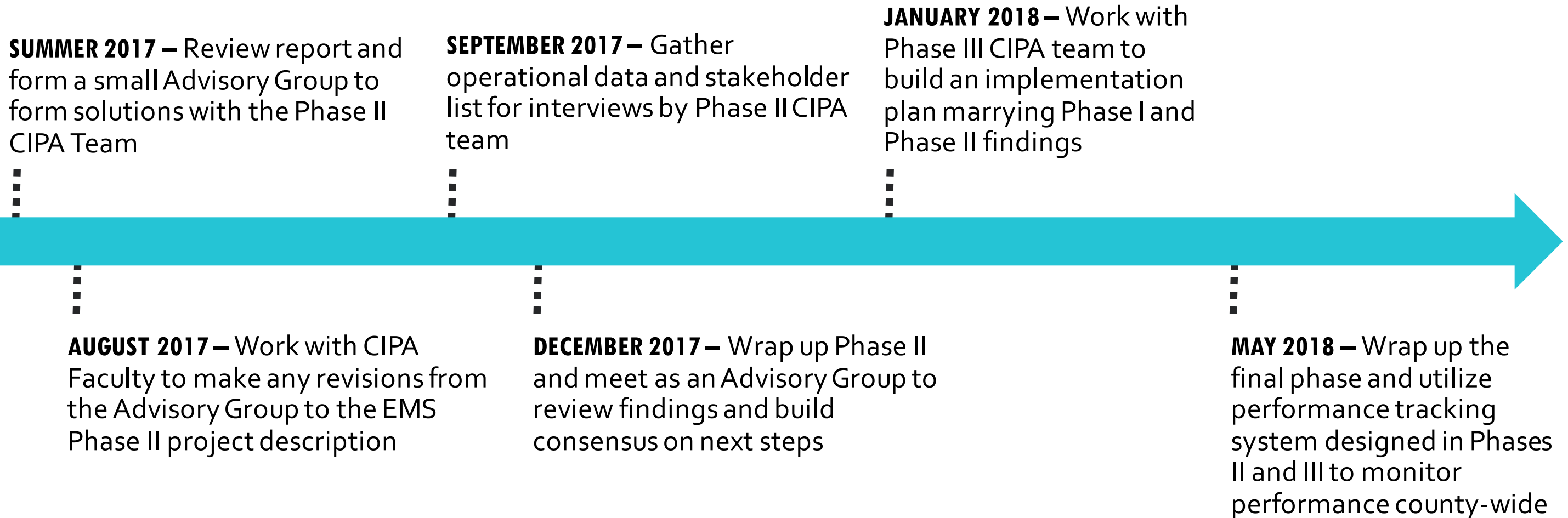
Project
Opportunities

Next
Steps



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The CIPA team has laid out an ambitious, but reasonable time frame to implement a tailored solution for Tompkins County EMS by Summer 2018



NEXT STEPS

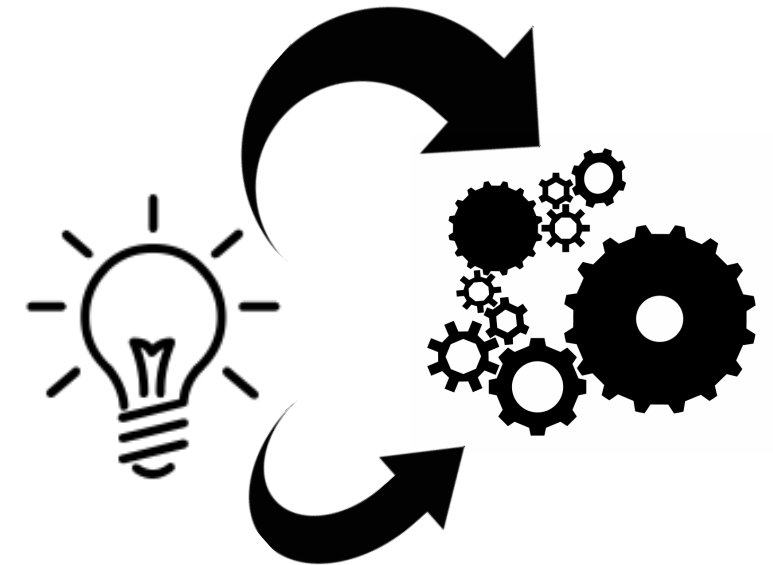
Phase II of this project will consist of gathering and analyzing operational data and completing and compiling stakeholder interviews



Research Phase
Spring 2017



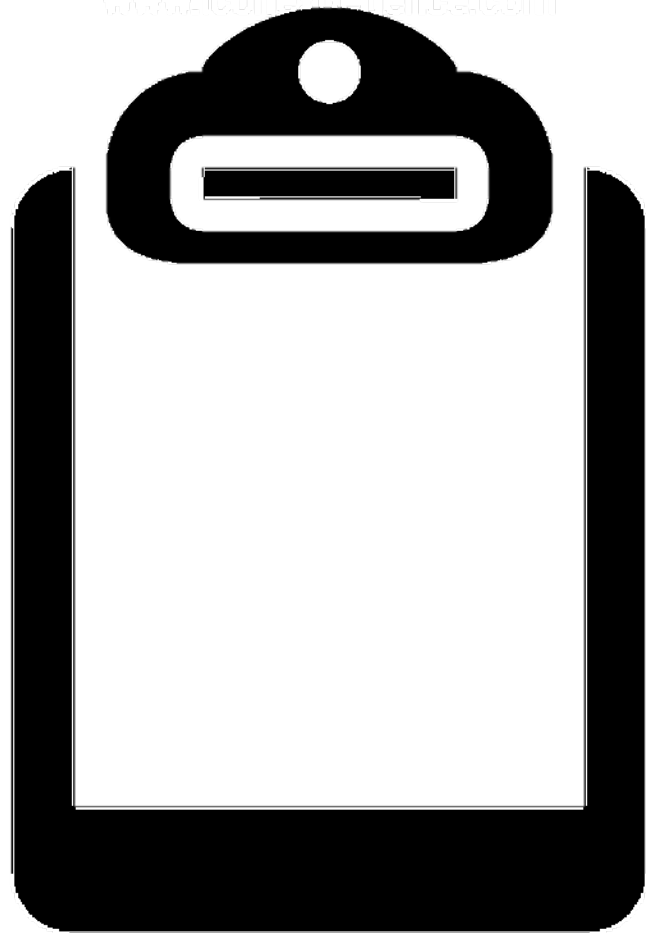
Current State Phase
Fall 2017



Implementation Phase
Spring 2018



Future opportunities include collectively answering several more questions such as, “what is the most useful amount of data to collect?”

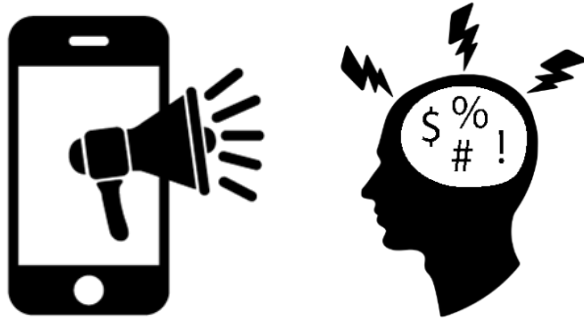


PHASES II & III COULD EXPLORE SEVERAL TOPICS

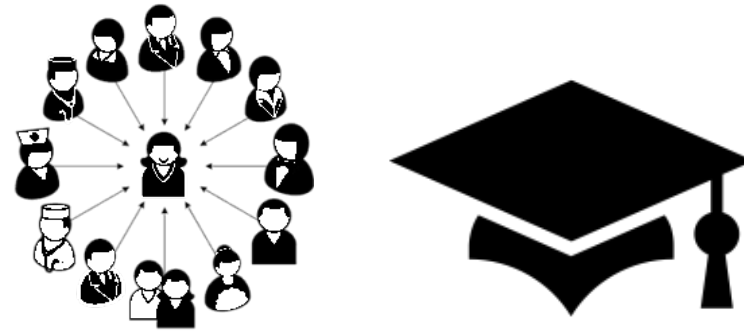
- Perform community assessment
- Analyze utilization of emergency personnel to assess feasibility
- Consider utilizing volunteers if paramedics are maximized
- Identify overutilizers and develop a more proactive approach
- Determine desired frequency and timeline of visits to other sites of care
- Consider the roles necessary to successfully implement

NEXT STEPS

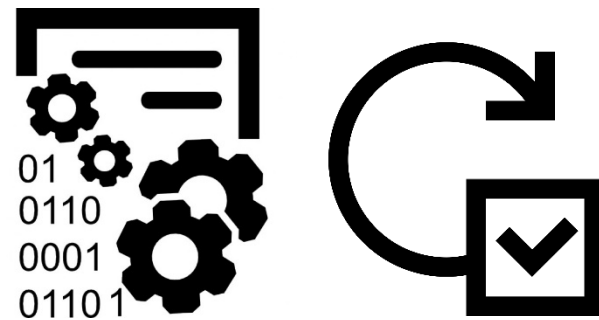
Now, we hope to engage a directed discussion on the topic's covered today



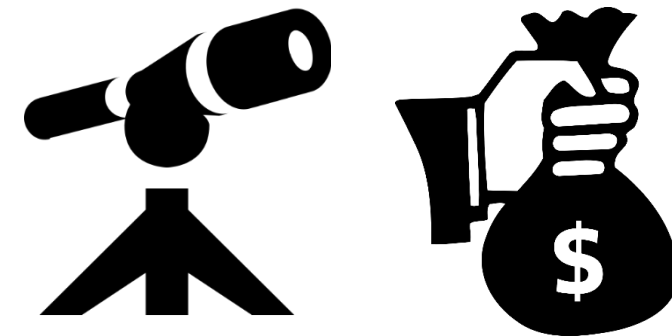
VOLUNTEER RECRUITMENT
AND RETENTION



COMMUNITY
PARTNERSHIPS



TRACKING AND MAINTAINING
INFORMATION



VISIONING AND
FUNDING



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Thank you.

We welcome your questions and comments.