

University of Vermont
ScholarWorks @ UVM

Family Medicine Clerkship Student Projects


Larner College of Medicine

2018

Ambulance response times in a rural VT town: Is there a role for FEMA's "Ready" training in Hinesburg, VT?

Kyna Silvana Donohue

Follow this and additional works at: <https://scholarworks.uvm.edu/fmclerk>

 Part of the [Medical Education Commons](#), and the [Primary Care Commons](#)

Recommended Citation

Donohue, Kyna Silvana, "Ambulance response times in a rural VT town: Is there a role for FEMA's "Ready" training in Hinesburg, VT?" (2018). *Family Medicine Clerkship Student Projects*. 411.

<https://scholarworks.uvm.edu/fmclerk/411>

This Book is brought to you for free and open access by the Larner College of Medicine at ScholarWorks @ UVM. It has been accepted for inclusion in Family Medicine Clerkship Student Projects by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.

Ambulance response times in a rural VT town

*Is there a role for FEMA's "Ready" training in
Hinesburg, VT?*

Kyna Donohue, MS3, MD Candidate 2020

November 2018

Family Medicine Clerkship, Hinesburg Family Medicine



The University of Vermont
LARNER COLLEGE OF MEDICINE

2. Problem Identification

THE NEED

- First response services in Hinesburg VT: Hinesburg Volunteer Fire Department
- Ambulance transport: “We are charged by the Vermont Department of Health with selecting the transport ambulance and the backup matrix should the primary transporter not be available” (1)
- **National average** time from call to time on scene: 7 minutes (urban), **14 minutes (rural)** (2)
- 72%* of ambulance calls 2012-2016: St. Michael’s ambulance service
- **Average time from call (Hinesburg) to time on scene by St. Michael’s ambulance: 22:07 minutes**

*at least 72 %. 1,013 total calls years 2012-2016; St. Michael’s response numbers only available 2014-2016



3. Public Health Cost

- Question: Does the duration of call to on scene time negatively effect health outcomes? (3, 4)
- Some medical emergencies are extremely time sensitive, eg:
 - Stroke/TIA: tPA administration < 3 hrs
 - Myocardial Infarction/Coronary artery disease: Cath/PCI
- Traumas



4. Community Perspective

**Interview 1: Michael Graham, MD
Family Medicine Physician at Hinesburg Family
Medicine Practice**

“Having practiced primary care in several rural settings in Vermont, it is not uncommon for patients to live 45 min away or more from a medical facility. Even under the best of circumstances, weather and other factors can delay First Responder and EMS arrival in the case of a medical emergency. In my current practice community of Hinesburg, VT, there is no in town-ambulance service, as is the case in many small, rural communities. In cases such as trauma and cardiac arrest, time is imperative, and initial basic first aid skills that can be learned by anyone can very literally save lives and reduce morbidity in certain situations.”

**Interview 2: Frank Koss, Hinesburg Chief of
Police**

- It is not financially feasible for Hinesburg to purchase an ambulance and pay salaries of the EMTs/drivers
- Good relationship and training with St. Michael's team facilitates extremely fast transitions from ambulance on scene to patient loading and leaving for hospital (eg: same 12 lead technology)
- Other technologies have been purchased to mitigate the time lapse (eg: AutoPulse Resuscitation System)
- As a member of the community that he works in, and having had an ambulance called for his own MI, Chief Koss believes that the response services are sufficient
- Plans for town to purchase own ambulance as the population is expected to increase over next several years due to building developments



5. Intervention and Methodology

THE TRAINING

- “Until Help Arrives” (5)
 - FEMA (Federal Emergency Medical Association), an agency of the US Department of Homeland Security
 - Purpose: provide training to citizen bystanders to provide life-saving care immediately, prior to EMS arrival
- Proposed Methodology:
 - CVU High School – Health education classes
 - Community course offered by fire department/police department
- Options:
 - Free 30 minute video
 - Free 3 hour “course”



6. Results/Response


Community outlook:

Dr. Graham says:

- I believe the “Until Help Arrives” program is an excellent way to help familiarize members of the community in what to do in the case of a medical emergency, and can lead to better patient outcomes.

Chief Koss says:

- “Better public training is always a good thing”

<p>ACTING QUICKLY SAVES LIVES</p>  <p>Life-threatening injuries can occur at any time</p> <ul style="list-style-type: none">• Car, motorcycle, or bicycle crashes• Home repair accidents• Active shooter incidents• Severe weather• Acts of terrorism• Transportation issues	<p>The Until Help Arrives program teaches basic skills to help keep people alive and safe until professional help arrives.</p> <p>98% of people who took the training said they are more likely to help as a result of what they learned.</p> <p>Since program launch 100k individuals completed training.</p> <p>6 to 9 minutes is the national average response time for Emergency Medical Services (EMS), but it may take up to 20 minutes or more in rural areas.</p>
--	---



The University of Vermont
LARNER COLLEGE OF MEDICINE

7. Evaluation of Effectiveness and Limitations

Evaluation:

- Data query needed to evaluate health outcomes (morbidity and mortality) of ambulance response before VS after implementation of public health education campaign

Limitations

- How to incentivize the public to attend?
- Even if courses are free, low attendance expected
- Who to teach at CVU and in community?



8. Future Directions

Future interventions ideas:

- Expand this project to look at ambulance time to scene in all VT rural towns
- Compare morbidity and mortality outcomes based on the response times
- If there is a significant effect of worse outcomes in rural areas it would be prudent to bring this to the attention of VT's physicians and elected officials as a public health need.

Note from the author: *This is an important issue that I had never given thought to, as I come from a large city where ambulance availability has never been an issue to my knowledge. As future physicians, it is imperative that we keep in mind the processes that take place in emergent situations that bring patient into our ERs in order to optimize patient outcomes and to ensure the public safety of our citizens.*



Slide 9: References

1. <http://www.hinesburgfd.org/>
2. Howard K. Mell, Shannon N. Mumma, Brian Hiestand. Emergency Medical Services Response Times in Rural, Suburban, and Urban Areas. *JAMA Surg* 2017; 152 (10):983-984. doi:10.1001/jamasurg.2017.2230
3. Richard P. Gonzalez, Glenn R. Cummings, Herbert A. Phelan, Madhuri S. Mulekar, Charles B. Rodning. Does increased emergency medical services prehospital time affect patient mortality in rural motor vehicle crashes? A statewide analysis. *The American Journal of Surgery* (2009) 197, 30 –34.
4. Wenche Torunn Mathiesen , Conrad Arnfinn Bjørshol, Jan Terje Kvaløy and Eldar Søreide. Effects of modifiable prehospital factors on survival after out-of-hospital cardiac arrest in rural versus urban areas. *Critical Care* (2018) 22:99 <https://doi.org/10.1186/s13054-018-2017-x>
5. <https://community.fema.gov/until-help-arrives>



10. Interview consent form

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview. Yes / No

Verbal consent granted by both interviewees:

1. Michael Graham, MD (Date of interview 11/13/2018)
2. Frank Koss, Hinesburg VT Chief of Police (Date of interview 11/14/2018)

