

# Leveraging Technology to Prevent Violence



Samantha Waddell, MPH Candidate

Preceptor: Dr. Scott Frank

Case Western Reserve University, Department of Population & Quantitative Health Sciences



## Background

- There are many types of violence which may affect youth in the Cleveland area, including but not limited to:
  - school-based violence
  - home-based violence
  - community-based violence
  - self-imposed violence
- Public health surveillance is necessary to systematically collect, interpret, and analyze data to guide and evaluate public health practice.
- New technologies may be leveraged as a form of public health surveillance to prevent violence among youth. These technologies include:
  - Natural language processing
  - Social Media analysis
  - Artificial Intelligence

## Population

- Youth in the city of Cleveland who are at-risk for experiencing violence.
- Organizations working to prevent youth violence

## Learning Objectives

1. Explore the use of innovative technology to prevent and interdict with violence affecting youth.
2. Describe new public health surveillance methods for monitoring violence.
3. Understand the grant application and research development process.

## Deliverables

- Literature review of public health surveillance methodology, along with a presentation of these methods.
- Summaries of grant opportunities.
- A letter of intent to be submitted for a grant application.

## Methods and Results

A primary component of this project was the collection of information via literature review. Topics investigated included:

- Use of technologies to prevent and report incidents of domestic violence
- Forms of public health surveillance and their various applications

In addition, the project consisted of researching various funding opportunities for the innovative use of technology to prevent violence. This included attending webinars, compiling summaries of grants, and communicating possible grant applications to the team.

The findings suggest that various opportunities to further the research through grant funding exist. The study team plans to apply for these grants. Next steps include:

- Developing Virtual Advocate (VirA) software
- Conducting a social media analysis
- Gathering and analyzing data qualitative data regarding violence affecting youth in Cleveland
- Establishing community partnerships with the Cleveland Department of Health (CDPH) and other youth-serving organizations in the community

## Activities

The work completed in this practicum will serve as the groundwork for a capstone project that can develop, implement, and evaluate a Virtual Advocate technology to prevent violence against youth.

My responsibilities throughout this project included:

- Meeting with an inter-professional group on a twice weekly basis to brainstorm applications of technology to prevent violence.
- Completing CITI training for IRB approval.
- Taking notes and communicating pertinent information to the study team.
- Investigating various grant opportunities and summarizing opportunities to present to the study team.

## Lessons Learned

- Grant writing, application, and submission process
- Organization and communication within a large interdisciplinary team
- Steps of a research process from initiation of an idea to implementation are not linear
- Utilization of technology as an effective public health tool

## Public Health Implications

1. Literature suggests that there is a lack of innovative new technologies used as public health surveillance.
2. Intervention via a Virtual Advocate can help to redistribute resources and power to those who need it most, such as youth and community organizations.
3. Development, implementation, and evaluation of the use of technology should be community-focused and conducted with the input of the community in mind.

## Acknowledgements

Much thanks to the members of the research team: Dr. Scott Frank, Dr. Colin Drummond, Professor Maya Simek, Dr. Rachel Lovell, Dr. Sathish Kumar, Evette Thompson, and Cathy Charles. A special thank you to Dr. Scott Frank for his guidance and words of support as my preceptor for this project. Thank you to Andrew Morris and the Case Western Reserve University Masters of Public Health Program for the opportunity to complete this project.

## Presentation

<https://youtu.be/A2BCVF-Jr5Y>

