A qualitative system dynamics model of overdose bystander behavior in the context of Connecticut's Good Samaritan Laws

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NIH HEAL INITIATIVE

We applied participatory system dynamics modeling to better understand factors influencing bystander responses to opioid overdose in the context of CT's Good Samaritan Laws (GSLs)

Our model contained 7 balancing and 8 reinforcing feedback loops that emulate the social system and public policy landscape in CT

We identified major policy changes that could reduce overdoses:
1. Improving naloxone access to increase use
2. Scaling up community-based harm reduction
3. Promoting safer drug use
4. Reducing stigma among first responders & healthcare workers

Background

GSLs are intended to facilitate a reduction in fatal opioid overdose by enabling bystanders to assist individuals experiencing an overdose without civil or criminal liability.

Lack of knowledge of GSL protections among potential bystanders and first responders may limit their effect.

Objectives

1. Develop a systems understanding of the forces and feedback processes influencing bystander behavior

2. Identify high-leverage policies for improving GSL impact

3. Increase community stakeholder capacity to apply systems thinking to address the opioid epidemic

Methods

We conducted group model building workshops that engaged a diverse set of participants representing a range of expertise, lived experience, and local knowledge

An iterative process of model refinement produced a qualitative system dynamics model of bystander behavior

Using the model, we identified leverage points and policy targets to improve GSL implementation

Results – Full Model & Example Feedback Loops
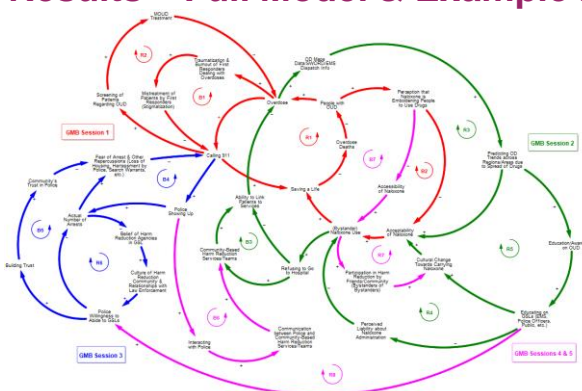
Causal loop diagram of overdose bystander behavior in the context of CT's GSLs

This model is a synthesis of feedback loops and variables identified during 6 group model building sessions engaging:

- Harm reduction experts
- Health care professionals
- Law enforcement
- First responders
- Individuals who have experienced or witnessed an overdose

Overdose, Calling 911, and First Responder Burnout (Balancing Loop)

First responder burnout & mistreatment of patients perpetuates stigma → bystanders hesitate to call 911 and overdose deaths increase

Drug Arrests, Faith in GSLs, and Community Trust in Police (Reinforcing Loop)

A culture of harm reduction within law enforcement and the community is perpetuated by trust and positive relationships between harm reduction agencies and police

Bystander Naloxone Use, Community Participation in Harm Reduction, and Cultural Change Towards Carrying Naloxone (Reinforcing Loop)

Cultural change towards carrying and using naloxone is driven by community participation in harm reduction and positive bystander experiences with naloxone administration

Naloxone Use, Acceptability, and Linking Patients to Services (Reinforcing Loop)

Naloxone use alone can have the unintended effect of fewer linkages of overdose victims to treatment services

More Information

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