

Dynamic Heat Mapping to Bridge the Gap Between Overdose and Recovery

VCU CS/HEALTH



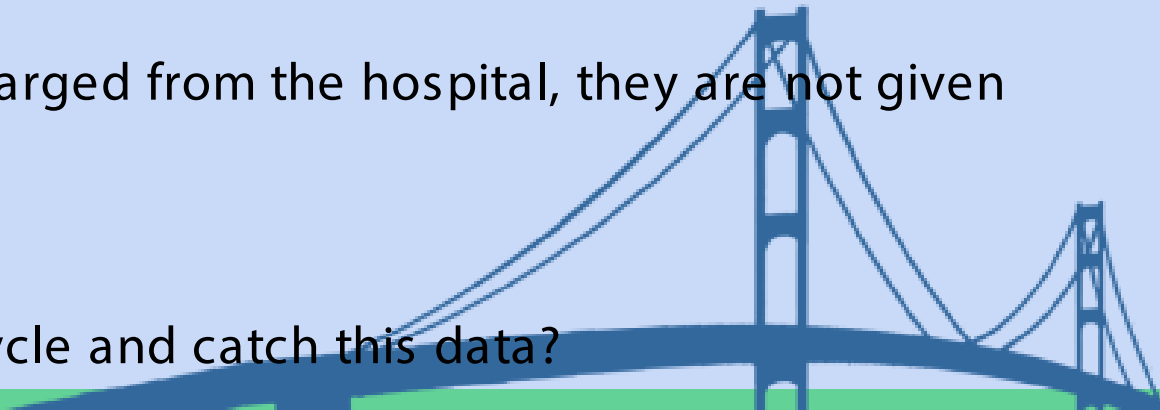
Why This Approach?

1100 people died from overdose last year in VA ... but what about those who didn't die?

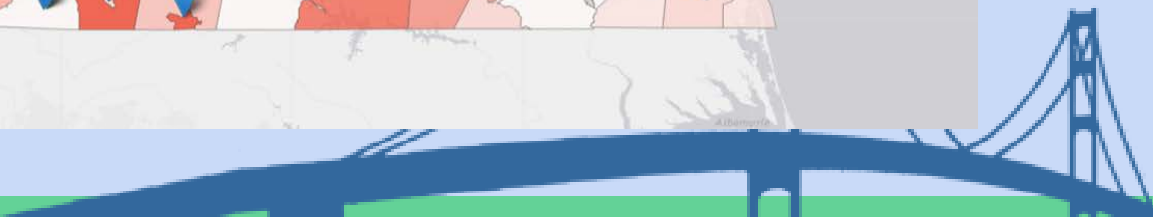
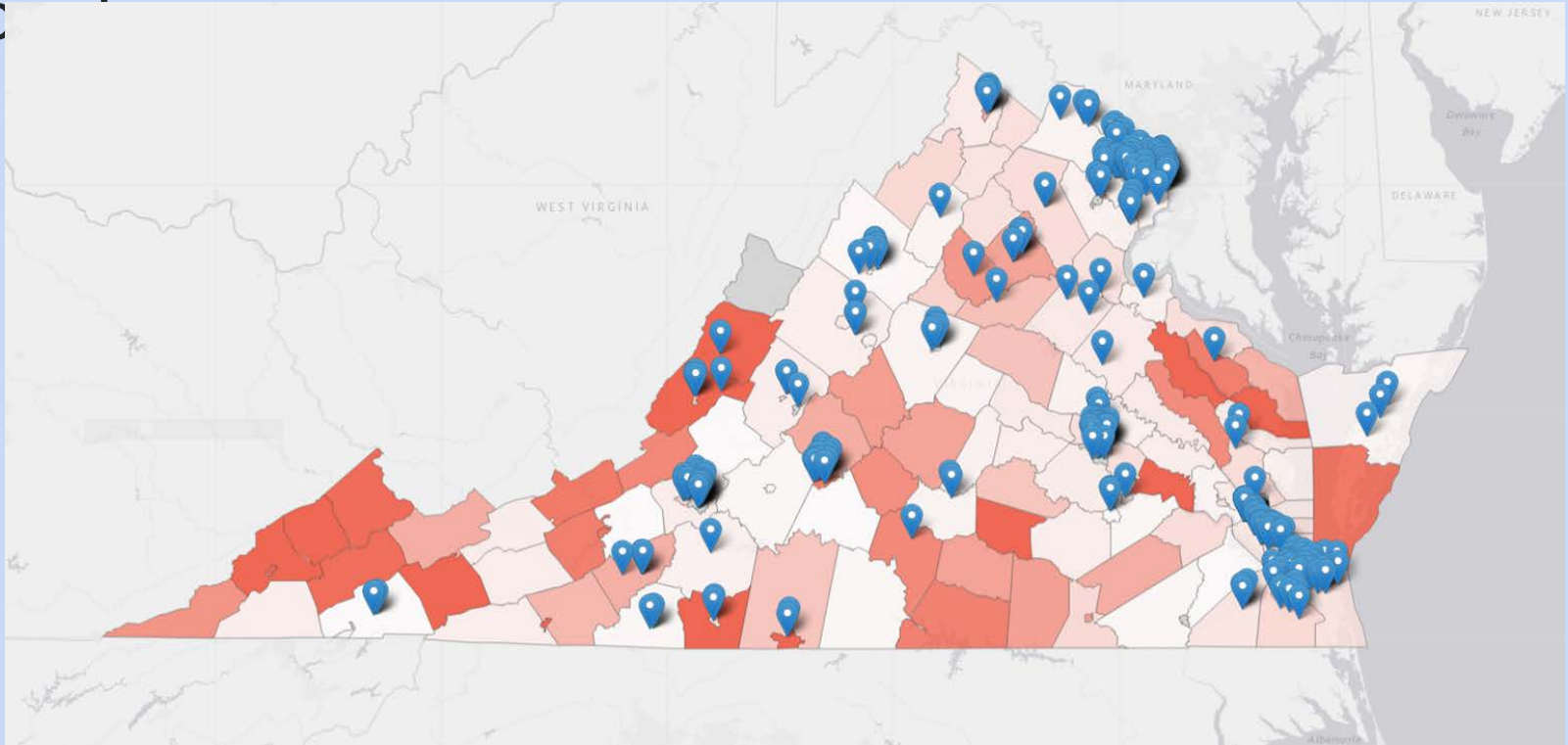
Patients can decline transfer to ED - this data is lost!

For patients being discharged from the hospital, they are not given follow-up resources

How do we break this cycle and catch this data?



Current Outbreak Versus Treatment Center Locations



Data Generation easy as 1-2-3

COMMONWEALTH OF VIRGINIA
PRE-HOSPITAL PATIENT CARE REPORT

HEALTH DEPARTMENT FORM # **Q 0265894**

Incident # Incident in CITY COUNTY of: _____ FIPS M M D D Y Y Y Y DATE

Agency _____ Agency # Unit # Agency Use #

Incident Location _____

LOCATION TYPE		TYPE OF SERVICE		INCIDENT DISPOSITION	
1 Home/Residence	7 Public Building	1 Scene	1 Treated, Transported EMS	6 Patient Refused Care	
2 Farm	8 Residential Institution	2 Unshed Interfacility Transfer	2 Treated, Transferred Care	7 Dead at Scene	
3 Mine/Quarry	9 Educational Institution	3 Sched Interfacility Transfer	3 Treated, Transported Private Vehicle	8 Cancelled	
4 Industrial Place/Premises	10 Other Specified Location	4 Standby	4 Treated and Released	9 No Patient Found	
5 Recreation Place	11 Unspecified Location	5 Rendezvous	5 No Treatment Required	U Unknown	
6 Street/Highway	U Unknown	U Unknown			

TIMES (24 Hour Format)

H	H	M	M	TIME OF CALL
H	H	M	M	DISPATCHED
H	H	M	M	RESPONDING
H	H	M	M	ARRIVE SCENE
H	H	M	M	ARRIVE PATIENT
H	H	M	M	LEAVE SCENE
H	H	M	M	ARRIVE DESTINATION
H	H	M	M	LEAVE DESTINATION
H	H	M	M	RETURN SERVICE

AIC _____ Print ID # _____ FR EMT ST EN CT I P RN MD OTH NA _____ Signature _____ Other Agency Units Responding _____

Att 1 _____ Print ID # _____ FR EMT ST EN CT I P RN MD OTH NA _____ Signature _____ Unit #

Att 2 _____ Print ID # _____ FR EMT ST EN CT I P RN MD OTH NA _____ Signature _____ Unit #

Operator _____ Print ID # _____ FR EMT ST EN CT I P RN MD OTH NA _____ Signature _____ Unit #

Operator _____ Print ID # _____ FR EMT ST EN CT I P RN MD OTH NA _____ Signature _____ Unit #

Patient's Name _____ SSN Patient's FIPS Patient's Physician _____

- “Suspected involvement of narcotics” checkbox
- “Narcan administered” checkbox
- “Location of event” field



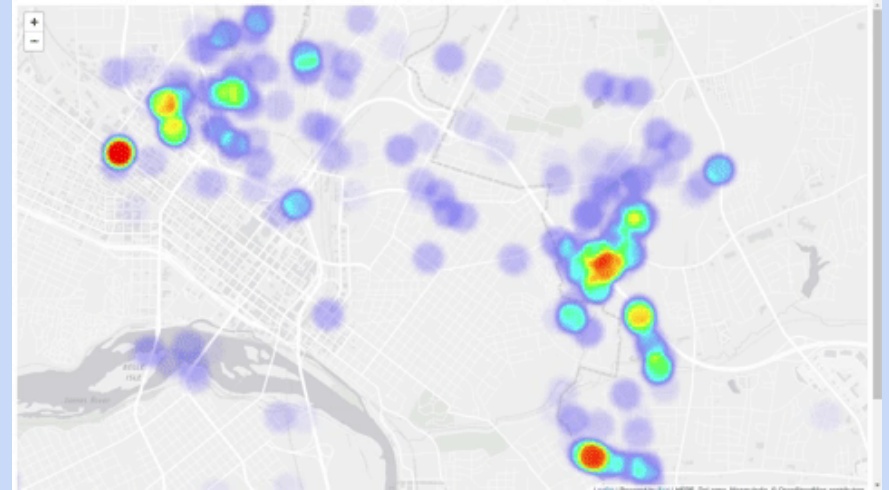
Heat Mapping the Path for Change

Machine Learning

- Trend **future hot spots**
- Enhance EMS response latency/
subsequent life-saving intervention

Offer direction for resource-limited services and **interprofessional collaboration**

- Substance abuse & Rehabilitation
- Public health/community efforts
- Law enforcement



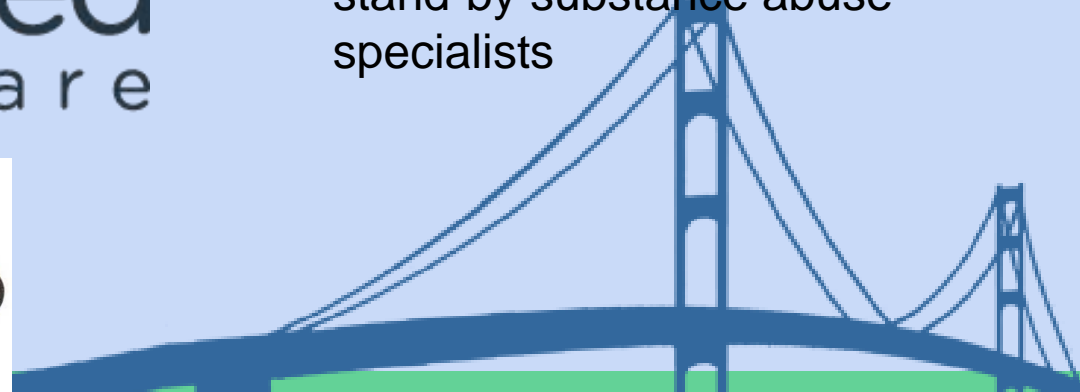
Establishment of Urgent Recovery Centers at Focal Hotspots



BetterMed
urgent care



- EMS transfer to Urgent Recovery Centers
 - **Alleviate ED**
 - **Increased and faster** access to life-saving intervention → ↓mortality
 - Bridge outpatient recovery with stand-by substance abuse specialists



Making Things Happen

EMS

- **Easy implementation** over pre-existing EMS system
- Little to **no cost**
- No added time or energy



Urgent Recovery Center

- Consider policy encouraging transfer of patient to clinic when narcan is administered

