911 Call Data Analysis: Possible deferment to non-law enforcement agencies

Published 8-17-20
By: Emily Lapel

Purpose

The purpose of this paper is to analyze 911 call data to understand what citizen-initiated calls and what law enforcement-initiated calls could be deferred to a non-law enforcement response such as a mental health care provider or behavioral health specialist.

Executive Summary

Through statistical analysis of 911 CAD data this paper explores 911 calls that could potentially be deferred to a non-law enforcement response. Data was coded for responses made by the following police units: STAR (Support Team Assisted Response), Civilian Co-Response Unit, and HOT (Homeless Outreach Team). An analysis of this data revealed that approximately 15% of calls received in the month of June over a three-year period are eligible for a STAR response. Further analysis of data showed that the STAR team has the current capacity to respond to 7 calls a day. Of 911 call data from Civilian Co-Responder Unit data showed that only 4.62% of calls resulted in an arrest. 37% of calls responded to by HOT were STAR eligible demonstrating an opportunity for police responses to individuals experiencing homelessness to shift away from law enforcement and into the realm of behavioral health. This paper then explores how Denver Police Department can improve its behavioral health response by improving data collection, increasing STAR unit capacity, increasing Co-Responder unit capacity, training officers to utilize the Co-Responder units more effectively, and shifting the role of HOT away from DPD and into DDPHE.

Definitions

CAD: Computer Aided Dispatch is the software 911 operators use to take, manage, and dispatch calls made to 911.

Nature Code: A nature code is a shorthand 911 call operators use within the CAD system to quickly categorize calls. Nature codes can also be called problem codes.

Co-Responder Unit: DPD's Crisis Intervention Response Unit, also known as the Co-Responder Units, consists of a patrol unit with an officer and mental health care professional.

MHCD: Mental Health Center of Denver coordinates with DPD to provide mental health care providers and clinicians for the Co-Responder units. These units focus on problem solving police calls with individuals experiencing behavioral and mental health distress.

MH: MH is the radio code for Co-Responder units. MH1 – MH11 signifies each unit in the CAD system.

STAR: Support Team Assisted Response, STAR is a community response program through the alliance between the Caring for Denver Foundation, Denver Police Department, Mental Health Center of Denver, Denver Health Paramedic Division, and community supports and resources. STAR provides person-centric mobile crisis response to community members who are experiencing problems related to mental health, depression, poverty, homelessness and/or substance abuse issues.

CAHOOTS: Crisis Assistance Helping Out On The Streets is a civilian response unit that is run by the White Bird Clinic in Eugene, Oregon. This clinic provides mobile crisis intervention 24/7 and is dispatched through the police-fire-ambulance communications center. Each team consists of a medic and a crisis worker.

HOT: DPD District 6 has a Homeless Outreach Team which seeks to connect individuals experiencing homelessness with services such as: addiction treatment services, shelter, and social services. Police District 6 encompasses the downtown Denver area.

Methodology

To gain a clear understanding of the data analysts reviewed all citizen-initiated 911 calls for the month of June from 2017 through 2019. When synthesizing data it became clear that identifying calls that could potentially be responded to by non-law enforcement entities would be subjective without gaining a deeper understanding of how nature codes are defined and delegated by Denver's 911 operating system.

For an objective understanding of potential non-law enforcement responses to 911 calls, analysts investigated how calls are delegated to Denver Police Department behavioral health initiatives: the STAR pilot program, Co-Responder Units, and Homeless Outreach Team. Analysts chose these three units for research because their duties are not explicitly related to criminality and focus on harm reduction mitigation and behavioral health.

Analysts then worked with Data Analysts at DPD to quantify the following: the number of calls that STAR has responded to since its inception; the number of potential calls across the City that are STAR eligible; the number of calls that the DPD Homeless Outreach Team responds to in a given period of time; and the number of calls that the Co-Responder Units respond to in a given period of time.

Citizen-Initiated 911 Calls in June 2017-2019 – Potential Non-Law Enforcement Response
To understand potential calls that could be delegated to non-law enforcement entities analysts identified nature codes that are currently used by the City's pilot STAR program. These nature codes are[1]:

- Assist

---

[1] Nature Code definitions can be found in 911-RG-C-STAR-RCMP_Final 05.27.20 - Attached document

- The caller is requesting assistance for things such as shelter, food, vouchers, or transportation that will indicate an appropriate /STAR response. Note: alternate response is not to be used for vehicle lockouts.
- Intoxicated person
  - The caller sees an intoxicated person stumbling around that needs help and needs a /STAR response.
- Suicidal Series
  - The caller is indicating they are feeling depressed or exhibiting depression but has no active plan, has no weapon, has not done anything to hurt themselves, and is non-combative. STAR can be utilized for a second party caller reporting for someone else.
- Welfare Check
  - The caller is reporting an individual 'sleeping rough;' or is requesting response to check on someone who hasn't been seen or heard from; sees someone acting strange but isn't doing anything else that would require police assistance; the subject is known to have mental health issues; the subject appears dazed, lost, is unable to tell the caller their name or engage with the caller.
- Indecent Exposure
  - The caller indicates someone is urinating and/or defecating in public and there is no lewd behavior.
- Trespass Unwanted Person
  - The caller wants a transient removed from private or public property; the subject may be in need of resources; the caller is not requesting police contact and is not wanting to sign a report of trespass.
- Syringe Disposal
  - The caller is requesting pick up of used syringes or providing a location of used syringes.

Analysts interviewed 911 Operations Manager, Shelly Lesnansky, to understand how the nature codes that are delegated to STAR were identified by DPD. The STAR pilot program is modeled after Eugene, Oregon's CAHOOTS program. Denver adopted the same nature codes that are delegated to STAR after Eugene's 911 Operations Manual.

Analysts then created tables from the dataset by pulling out calls that have been identified by nature codes that the STAR pilot program responds to by year, by council district, and by priority type.

STAR Eligible Calls - Methodology
DPD Data Analysts searched CAD call notes for an indication if the 911 call operator made a determination- based on the Operations Manual decision flow chart - to see if the call was STAR eligible. There is currently a key call operators can press that shows what they have designated a call as STAR eligible in the CAD system. It should be noted that this is a new data-tracking system on which not all call operators have been trained.

STAR/CAD Responded Calls
DPD Data Analysts searched all calls for service this is inclusive of citizen-initiated calls as well as officer or STAR personnel calls. DPD Analysts pulled files by using the STAR radio identifier and calls that were dispatched by a police agency in the CAD system.

Co-Responder Responded Calls

DPD Data Analysts selected calls with Co-Responder radio identifiers from November 2019 to present. Previously, Co-Responder calls were not well documented in the CAD systems. DPD Data Analysts pulled data by looking for the "MH" (Mental Health) call sign in the call system and personnel ids for co-responder units. Data Analysts also reached out to MHCD and Denver 911 call center to confirm accurate methodology for collecting data on Co-Responder Calls.

HOT Team Responded Calls
DPD Data Analysts selected calls with the HOT radio identifiers from August 21, 2018 through July 25, 2020. The Homeless Outreach Team is only in Police District 6, which encompasses the downtown Denver area.

Results

Requests for service from citizens and first responders are categorized, using nature problems, based on the general nature of the situation. Nature problems are assigned a priority level based on the threat to life, the impact to quality of life or the threat to property. Emergency communication centers utilize computer software for call intake and dispatch, requiring a nature problem and priority level to prioritize incidents in a queue. Nature problems and associated priorities are not standardized in Colorado or across the country, rather they are unique to each communication center and defined in collaboration with the public safety agencies served by the center.

Denver 911 primarily uses priorities 0 – 6 for police incidents. Several other priorities are used for special events, and incidents not requiring a response. Priorities 0 – 2 speak to in-progress, or just occurred problems, where there is an imminent threat to life. Priorities 3 - 4 categorize situations that affect the quality of life for the caller and or others in the area. Priorities 5 - 6 are property crimes requiring a report. Priorities 7 – 9 are for special events, incidents being monitored or other activity such as a tow request or surveillance being conducted by outside agencies.

Examples of Priority and Nature Problem pairings;
- P0 = Help, Vehicle or Foot Pursuit
- P1 = Child Abuse/Neglect IP-JO, Bomb Threat, Hold Up alarm, Domestic Violence IP-JO, Missing Child, Shooting, Accident with Injury, Robbery IP-JO, Drowning, Weapon, Explosion, Aircraft Crash, Suicidal Person / Suicide
- P2 = Medical incidents where CPR, bleeding instructions, and childbirth are needed, Family Disturbance, Fight, Nature Unknown, Prowler, Threats IP-JO, Down Person, Assault IP-JO
- P3 = Suspicious Item, Burglary, Disturbance, Silent Alarm, Intoxicated Person, Noise Complaint, Shoplifter, Civil (standby), Curfew Violation
- P4 = Accident no injury, Illegal dumping, Runaway, Assist, Elder Abuse / Vulnerable Adult, Welfare Check, Attempt Contact or Pickup
- P5 = Auto Theft, Auto Theft Recovery, Fraud, Follow up
- P6 = Criminal Mischief, TFMV, Threats, Harassment
- P7 = Fireworks, Surveillance, Ranger – Park Patrol
- P8 = Tow, Maintenance, Court, Community Meeting, Eviction
- P9 = Tow – Short Tow & Clearance Information (only 2 nature problems)

It should be noted that the type of response issued by 911 call operators to an event are more than the nature codes prescribe. 911 call operators determine what calls go to what agencies based on several

factors. In cases where a non-law enforcement unit could respond, operators decide if there is a violent or criminal element when talking to a citizen to determine if police presence is needed. A decision-making tree is designed to look at variables such as violence, weapons, and possible escalating behaviors that could lead to a violent outcome.

Figure 1 is the decision-making tree for Welfare Check nature codes, demonstrating the variables that Call Operators must consider when delegating a call to STAR or a law enforcement agency.
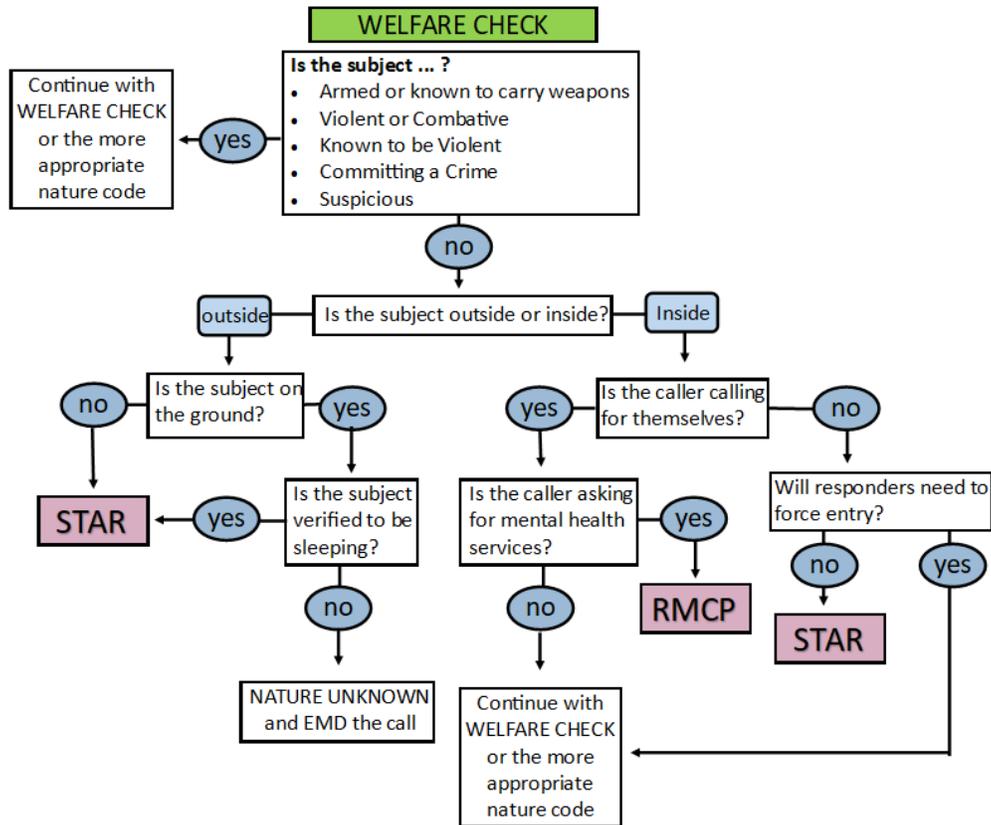
WELFARE CHECK

Is the subject ... ?
- Armed or known to carry weapons
- Violent or Combative
- Known to be Violent
- Committing a Crime
- Suspicious

yes → Continue with WELFARE CHECK or the more appropriate nature code

no → Is the subject outside or inside?

outside → Is the subject on the ground?
- no → STAR
- yes → Is the subject verified to be sleeping?
  - yes → STAR
  - no → NATURE UNKNOWN and EMD the call

Inside → Is the caller calling for themselves?
- yes → Is the caller asking for mental health services?
  - yes → RMCP
  - no → Continue with WELFARE CHECK or the more appropriate nature code
- no → Will responders need to force entry?
  - no → STAR
  - yes → Continue with WELFARE CHECK or the more appropriate nature code

Figure 1[2]

STAR Performance Since June 1, 2020[3]

The STAR pilot provides crisis de-escalation, connection, and system navigation for anyone utilizing the STAR dedicated phone number or 911 and assists in supporting client self- identified needs. This includes access to low barrier treatment options, reconnection to service providers or safe locations identified by the client, as well as transport to identified supports as needed. Currently, STAR is comprised of one response unit with two individuals: an EMT and a mental health care provider. The unit operates Monday through Friday 10:00a through 6:00P. Currently, the STAR pilot program only

_____

[2] 911-RG-C-STAR-RCMP_Final 5.27.20 Attached Document
[3] STAR Performance Since June 1, 2020 Attached Document

operates in the downtown 'lollipop,' around downtown Denver and South along Broadway until Mississippi.

An analysis of calls that STAR responded to from June through the end of July revealed that on average the unit is able to respond to approximately 7 calls a day.

Between June 1 and July 24, 2020:
- STAR responded to 289 calls
- 242 calls were initiated by citizens
- 47 calls were initiated by the STAR team

Table 1 illustrates the most common STAR calls

Nature Code	Percentage of Total
Assist	9%
Disturbance	4%
Follow Up	7%
Indecent Exposure	5%
Intoxicated Person	3%
Suicidal Person	9%
Trespass/Unwanted Person	29%
Welfare Check	19%

Table 1

STAR Eligible Calls Since June 1, 2020[4]
DPD Data Analysts ran reports from the CAD system to see what calls could potentially be diverted to the STAR program, should it expand citywide. Calls were considered eligible based on 911 Operators selecting an option in the CAD reporting system that labeled the call as STAR eligible. Data was selected for calls made between the hours of operation for the current STAR pilot program. These incidents are separate from the calls STAR responded to within the same timeframe.

Between June and July 24, 2020:
- 911 Call Operators identified 288 calls that could have been transferred to STAR
- Council Districts 1, 3, 4, 5, 7, 8, 9, 10, and 11 had calls that 911 Call Operators identified as eligible

Table 2 illustrates the most common STAR eligible calls:

Nature Code	Percentage of Total
Assist	6%
Disturbance	4%
Indecent Exposure	5%
Intoxicated Person	5%
Suicidal Person	3%
Trespass/Unwanted Person	44%
Welfare Check	27%

---

[4] STAR Eligible Calls Since June 1, 2020 Attached document

Table 2

DPD data analysts expressed surprise at the small amount of STAR eligible calls that were identified by 911 operators. They surmised that 911 operators may not have been fully onboarded with this new key which could be why the numbers are lower than expected. 911 Operators were also only identifying calls that occurred during STAR operational hours of Monday through Friday

As a comparison, Council Analysts utilized the CAD data from June 2019 to run a report on the number of calls made by citizens across the city that fall under the nature codes where a STAR response is eligible. 17% of citizen-initiated calls based on nature code alone were eligible for a STAR response.

Table 3 illustrates citizen-initiated calls made in June 2019 that are STAR eligible:[5]

Nature Code	Number of Calls	Percent of STAR eligible Calls
Assist	519	10%
Indecent Exposure	199	4%
Intoxicated Person	420	8%
Suicidal Person / Suicide	392	8%
Trespass / Unwanted Person	2337	45%
Welfare Check	1334	26%

Table 3

Co-Responder Calls[6]
Co-Responders can respond to any nature code, of which there are over 100, and are not restricted to the designated nature codes that STAR responds to. Co-Responders ride along with uniformed officers for calls such as wellness checks to family disturbances, or a shooting. There are currently 11 Co-Responder units in DPD.

Between November 1, 2019 through July 31, 2020:
- Co-Responders responded to 3,743 calls
- 2,649 calls were Citizen-Initiated calls that 911 Operators delegated to Co-Responder units
- 1,094 calls were law-enforcement initiated that called for a Co-Responder unit
- Co-Responders responded to 115 nature codes

Table 4 illustrates calls that received over 100 Co-Responder Responses:

Nature Code	Number of Calls	Percentage of Total
Vehicle Stop	103	3%
Self-Initiated Action	113	3%
Domestic Violence IP-JO	120	3%
Nature Unknown	123	3%
Suspicious Occurrence	148	4%

---

[5] Citizen Initiated CAD Calls Attached Document
[6] Co-Responder Calls Attached Document

Disturbance Family	162	4%
Follow Up	173	5%
Trespass / Unwanted Person	174	5%
Disturbance	223	6%
Welfare Check	306	8%
Suicidal Person / Suicide	349	9%

Table 4

HOT Team Calls[7]

From April 21, 2018 through July 25th, 2020 DPD's Homeless Outreach Team:

- Responded to 9,769 calls
- 4,513 calls were citizen-initiated
- 5,255 calls were law-enforcement initiated
- 37% of calls that HOT responded to were nature codes that fall under the STAR response
- The majority of these calls were for a trespass or unwanted person

Table 5 illustrates calls that received over 100 HOT Responses:

Nature Code	Number of Calls	Percentage of Total
Trespass / Unwanted Person	3224	33%
Self-Initiated Action	1416	14%
Follow Up	1300	13%
Subject Stop	917	9%
Directed Follow Up	593	6%
EMS request PD	290	3%
Disturbance	194	2%
Assist	136	1%
Vehicle Stop	108	1%
Welfare Check	106	1%

Table 5

Analysis and Recommendations

Based on analysis of all citizen-initiated phone calls in the month of June from 2017, 2018, and 2019 calls that fall under the STAR response nature codes averaged 15%.

Figure 2[8] shows request for service calls from citizens by nature code and priority for the month of June in 2017, 2018, and 2019. Nature codes that STAR does not currently respond to have been filtered out, lowering the total number of calls from 92,135 to 14,239. Through this analysis approximately, 15.5% of calls fall under nature codes that are currently prescribed for a potential STAR response. Figure 2 is also categorized by Priority Code to further illustrate the nuance of calls and their prescribed nature codes.

---

[7] HOT Team Calls Attached Document
[8] Citizen Initiated CAD Calls- Attached Document

Nature Code	Number of Calls
Assist	**1514**
P2 Urgent	1
P3 Public Need	5
P4 Routine	1508
Indecent Exposure	**583**
P3 Public Need	583
Intoxicated Person	**1454**
P3 Public Need	1454
Suicidal Person / Suicide	**1226**
P1 Emergency	1225
P3 Public Need	1
Trespass / Unwanted Person	**5957**
P3 Public Need	5945
P4 Routine	3
P5 Report High Priority	7
P6 Report Low Priority	2
Welfare Check	**3505**
P2 Urgent	2
P3 Public Need	7
P4 Routine	3496
(blank)	
Grand Total	**14239**

Figure 2

In order to reach the goal of enhancing a harm reduction approach to criminal justice in Denver the following should be explored:

Address the data gap for STAR eligible responses

Firstly, there is a data gap that could provide accurate, real-time information on the current need for the STAR response team across the city. As is evident between the gap Council Analysts identified in June 2019 of 5,201 identified calls and the 288 calls 911 Operators identified in the month of June 2020. Operators also only identified potential STAR calls during STAR's operational hours of Monday through Friday 10:00a through 6:00p, whereas the CAD dataset that Council analysts used was comprised of calls received seven days of the week. Increasing 911 operator onboarding of the system identification methods for STAR eligible calls 24-hours a day, seven days a week would provide Council and Dept. of Safety personnel a more accurate understanding of the volume of need for alternative responses than law enforcement.

Increase co-responder units

According to a 2019 briefing, Denver's Co-Responder program began as a pilot partnership within Denver's Crisis Intervention Response Unit in Spring 2016. In January 2018 the Mental Health Center of Denver was awarded $1.2m by the State was able to double its service capacity.[9]

From November 2019 through July 2020 only 4.62% of calls resulted in an arrest, and 22% of calls received by Co-Responder Units were requests for back-up by other law enforcement officers, demonstrating the ability of Co-Responder Units to provide crisis intervention and limit the number of altercations individuals in crisis experience with law enforcement officers.

Table 6 illustrates the most common results from Co-Responder dispatches:

Call Result	Count of Call Result
Party Advised[10]	901
Back Up / Cover Car	823
Report Made	435
K - Street Check Completed[11]	315
UTL / Unfounded / Unsuccessful[12]	285
No Police Needed	248
GOA[13]	176
Arrest Made	173
File Only	134

Table 6

Currently there are 11 Co-Responder units, however they will be increased to 18 units with the passing of Council Resolution 20-0786 that accepts $1,227,161 in funding from Caring for Denver.[14] However, DPD's expansion plan provides for clinicians and co-responders to serve part-time with staffing dependent on and in response to data assessments.[15]

---

[9] 2019 Co-Responder Unit Briefing to Safety, Housing, Education & Homelessness Committee
[10] Action not taken but party was talked to (Ex: noise ordinance violence)
[11] Non-criminal action documented
[12] Unit arrives on scene and could not confirm events reported
[13] Gone On Arrival
[14] CR20-0786
[15] CitywideMap_Clinician_August2020 Attached Document

Analysis of calls also revealed a difference between call originations with a 42% difference between co-responder units dispatched by 911 operators and calls requested from officers. Tables 7 and 8 below demonstrate the difference in types of calls that are delegated to Co-Responder units from citizen-initiated calls versus officer-initiated calls.

Table 7 illustrates the top ten citizen-initiated calls delegated to Co-Responder units:

Nature Code	Count
Welfare Check	289
Suicidal Person / Suicide	256
Disturbance	207
Trespass / Unwanted Person	167
Suspicious Occurrence	134
Disturbance Family	128
Nature Unknown	90
Domestic Violence IP-JO	83
Attempt Contact or Pickup	68
Accident No Injury	58
EMS request PD	58

Table 7

Table 8 illustrates the top 10 officer-initiated calls delegated to Co-Responder units:

Nature Code	Count
Follow Up	171
Self-Initiated Action	113
Vehicle Stop	103
Suicidal Person / Suicide	93
Subject Stop	77
Domestic Violence IP-JO	37
Disturbance Family	34
Nature Unknown	33
Attempt Contact or Pickup	28
Weapon / Concealed Weapon	27
Directed Follow Up	27

Table 8

_____

It would be beneficial to see, if overtime, the nature codes that are most frequently referred to Co-Responder units by police are consistent. These nature codes could then potentially be automatically delegated to Co-Responder units by 911 call operators as a priority.

<u>Transition HOT to a Non-DPD Entity</u>

Perhaps the strongest area where there is potential to increase harm reduction methods in the realm of public safety is the Homeless Outreach Team in Police District 6. While the mission of HOT is to connect individuals experiencing homelessness with shelter services, mental health services, long-term housing; the contradicting policies that criminalize homeless behaviors. while also seeking to use police officers as an extension of service providers can be confusing, cause mistrust amongst the homeless population, and traumatizing.[16]

Over a two-year period, HOT responded to 9,769 calls, 37% of the calls HOT responded to fell within the STAR nature codes. The second most common call received by HOT was a self-initiated action in which an individual calls 911 seeking assistance such as detox, addiction treatment, etc.

STAR's area of operation overlaps with HOT and its mission encompasses many of the same issues as HOT. HOT and its resources should be absorbed into STAR overtime to increase STAR's capacity, area of operation, and access to trauma-informed services for individuals experiencing homelessness.

Conclusion

It should be noted that the nature codes that are delegated to behavioral health services within DPD fall within the current context and understanding of what function law enforcement serves for society. As cities explore new methods of policing and means of preventing criminal behavior, focusing on behavioral health and harm reduction policies can alleviate the causes of crime: not an individual's moral failing but the result of societal inequities and deprivation of opportunity.

Denver recently moved its Crime Prevention and Control Commission, the purpose of which is to explore and invest in crime prevention strategies, out of the Department of Safety and into the Department of Public Health and Environment's Behavioral Health Arm. This move away from DPD but maintaining collaboration with law enforcement echoes best practices in academia[17] – framing many 'criminal' behaviors through a public and behavioral health lens. Reviewing how society defines criminality and criminal behaviors is key to holistically understanding our notion of law enforcement and potential reform.

---

[16] US Interagency Council on Homelessness, The Council of State Governments Justice Center, 2019

[17] Community Crime Prevention: A Theoretical and Empirical Overview. In *Refocusing Crime Prevention: Collective Action and the Quest for Community* ; *Criminology and Public Policy: Putting Theory to Work*. Linking Public Health, Social Capital, and Environmental Stress to Crime Using a Spatially Dependent Model.