LINKING THE DOSAGE OF MENTAL-HEALTH SERVICES RECEIVED TO OUTCOMES FOR THE CRIMINALLY INVOLVED

STAKEHOLDERS' INFLUENCE ON THE USE OF HOME ELECTRONIC INCARCERATION: A STUDY IN POST-PANDEMIC CHARLOTTESVILLE

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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UNDERSTANDING MENTAL ILLNESS IN UNITED STATES JAILS AND PRISONS

Months into the coronavirus pandemic, after being locked away in our homes alone, with roommates, or with family, cut off from the routine aspects of pre-pandemic daily life, mental health came to the forefront of society's attention, enlightening us to another pandemic: mental illness (Nealon, 2021). However, many are less aware of the prominence of severe mental illness in United States (US) jails and prisons. 64% of jail inmates, a segment of the population truly locked away and cut off from the routines – and joy – of "normal" daily life, suffer from mental illness in some capacity (Urban Institute, 2015). Mental illness is so prevalent in US jails and prisons partially due to systematic changes decades ago. 1955 marked the beginning of a large movement known as deinstitutionalization, the removal of severely mentally ill patients from large state mental institutions back into the community then closure of those institutions. At the start of 1955 there were 558,239 patients in public psychiatric hospitals and by 1994 there were merely 71,619, even with a sizably larger national population (Torrey, 1997). When studying the jail and mental institution populations of the United States between 1904 and 1987, George Palermo and colleagues found evidence overwhelmingly supporting an inverse relationship between the two populations and concluded that jails did absorb the population removed from mental institutions after this deinstitutionalization movement (Palermo, Smith, & Liska, 1991). With jails and prisons holding approximately ten times more individuals with serious mental illness than state mental hospitals, US jails and prisons have become the new psychiatric hospitals of the nation (TAC, 2014).

In an environment anti-conducive to healing, where treatment is unavailable or underfunded, and most outlets to hide from this mental illness are taken away, Col. Martin Kumer, Superintendent of the Albemarle-Charlottesville Regional Jail (ACRJ), points out that it

is no surprise that so many inmates struggle with mental health issues. He acknowledges that the Covid-19 pandemic drastically changed the operation and population of this country's jails, and while experts like him have a solid understanding of the trends over the entire population, they know little about how the pandemic affected inmates with severe mental health issues in particular. Digging into the effects of the pandemic on this group could prove helpful in better understanding how to manage and care for individuals with severe mental illness within the criminal justice system (Kumer, personal communication, 2022).

Student-led projects in the past have used data from multiple public entities and community resources in the Blue Ridge area to investigate trends in the Charlottesville criminal justice system. Past capstone teams have analyzed data from the ACRJ, Region Ten Community Board (R10), and Blue Ridge Area Coalition for the Homeless (BRACH) to uncover trends and inform evidence-based decision making about the demographics, treatment, and overall incarceration of individuals with SMI for stakeholders in the Charlottesville area criminal justice system (Boland et al., 2019). As a capstone team, this year we plan to investigate trends in inmate population and outcomes throughout the various stages of the coronavirus pandemic in order to better understand how the pandemic affected criminal offenders with SMI. These efforts should provide hard evidence to inform decision makers.

DATA-INFORMED DECISION MAKING IN THE CHARLOTTESVILLE AREA CRIMINAL JUSTICE SYSTEM

With a $50 million renovation to ACRJ in the works featuring a new mental health ward as one of the largest additions, it is plenty clear how mental illness and the treatment of SMI is important to decision makers in the Charlottesville criminal justice system (Kumer, personal communication, 2022). Using data to inform decisions has been a priority for the Charlottesville

criminal justice planner since the founding of the Albemarle-Charlottesville Evidence Based Decision Making Policy Team (EBDM) consisting of members across all reaches and practices of the Charlottesville criminal justice system in 2010 (OAR, 2022). Selected by the National Institution of Corrections (NIC) as one of seven national pilots, the EBDM Policy Team works to leverage research and available data to guide policy and practice decisions, aiming to improve outcomes of decisions (NIC, n.d.). Previous capstone teams have presented to the EBDM Policy Team to help decision-making. Specifically, the 2017 team linked previously disconnected datasets from R10 and ACRJ to gain insight into how the community resources affected inmate outcomes and how different inmates participated in community resources, helping multiple stakeholders inform their decisions moving forward. Additionally, their efforts gained the city $65,000 in grant money to start a mental health docket (Burge et al., 2017). Stakeholders in the Charlottesville criminal justice system understand general trends from the pandemic, such as overall decrease in both crime and incarceration, but they have no insights into the finer details, such as whether or not this decrease has been seen equally across age, race, sex, or mental health status (Kumer, personal communication, 2022). The existing community relationships and prior data analysis offer a great framework to provide decision makers with more detailed, up-to-date evidence about pandemic trends to inform their decisions.

Our goal this year is to use the ACRJ database to investigate trends in the population of inmates with SMI pre- and post-pandemic to learn about the effects of the pandemic on this group, serving to inform decision makers on how to better manage individuals with SMI. Additionally, we plan to link and analyze the R10 and ACRJ databases to investigate how R10 treatment dosage, the level or number of involvements with R10, is related to patient outcomes. We will leverage existing data manipulation and analysis from past capstones to accelerate our

technical progress and guide us towards best practices. After obtaining the data from community clients, we will upload it to the secure drive, de-identify sensitive information, and then load it into R and Excel to perform data analysis. Our data analysis in R will aim to generate informative charts and statistics to provide hard evidence for the EBDM Policy Team about changes in the total population and mentally ill population during the Covid-19 pandemic and the effectiveness of community resources.

To investigate trends in the population of inmates with SMI, we plan to analyze demographics of this group pre- and post-pandemic and compare this to both the rest of the inmate population and regional/national populations as a whole. We will also look into information about these individuals' outcomes/involvement in jail, studying length of stay, severity of offenses, and recidivism through the pandemic. Additionally, we plan to identify the specific SMI that individuals screen in for, and see how the breakdown of these subgroups compare to expected values (national rate of specific mental illnesses). To investigate how R10 treatment dosage affects patient outcomes, we will link together the R10 and ACRJ databases to look at recidivism by level of involvement with R10 and investigate how timing of linkage to R10 treatments (before arrest, only after arrest, both before and after) affects outcomes like recidivism and severity of potential offenses.

THE BACKGROUND AND BOOM OF HOME ELECTRONIC INCARCERATION

Corrections in the United States is a massive and costly system. The United States has the largest correctional system in the world, with nearly 2 million incarcerated individuals (Sawyer & Wagner, n.d.). The government spends over $89 billion dollars on corrections per year, and the true cost of corrections – including the costs to individuals and families affected by incarceration – is believed to be much higher (Bureau of Justice Statistics, 2017). With more

people per capita locked up than any other nation and the monetary cost so high, it is no wonder many would like to turn away from traditional incarceration methods (Sawyer & Wagner, n.d.). These efforts to reduce the number of incarcerated individuals and social issues related to incarceration is known as decarceration. Optimal decarceration strategies aim to decrease the total number of incarcerated individuals, the total population in jails/prisons, racial disparity in incarceration, and total spending on incarceration (Grunwold, 2022). While probation, fines, and delayed sentences have always been means to promote the population and spending goals of decarceration, the widespread use of electronically-monitored house arrest – releasing offenders to their homes with location-tracking ankle bracelets that contact authorities if they leave the premise –began in 1983 (Lilly & Ball, 1987).

Immediately, supporters of the house arrest technology, now called Home Electronic Incarceration (HEI), cited multiple benefits of the practice. Chicknavorian (1990) argues that it promotes public safety by keeping the offender off the streets and under surveillance, saves money with a 50% lower cost per inmate, and gives offenders the ability to stay at home with their family (*ibid*). While HEI has its supporters, there are plenty who are weary of its mass use. Detractors are concerned that HEI can be used to reduce offenders' liberties by issuing house arrest instead of punishments like probation. In these situations, house arrest undermines personal liberty through: decreasing personal and family autonomy by radically changing life at home, violating privacy by giving information to private companies, and putting unfair costs on users who must pay fees to use the service (Bhadha et al., 2021).

With the arguments for and against the use of HEI in certain scenarios, HEI offered an incredibly practical and urgent solution after the Covid-19 pandemic. Soon after the start of the pandemic, those in the criminal justice system quickly realized that jails were at particularly high

risk of outbreak both for inmates and employees. (Akiyama, Spaulding, & Rich, 2020). This applied immediate pressure to promote social distancing for employees and inmates, leading jails across the nation to turn to different means of diverting offenders from taking up space in jail (L.-B. Eisen, A. Grawert, & T. Merkl, April 6, 2020). As a method of in-person diversion, ACRJ turned to HEI, purchasing more monitoring units and redirecting more offenders to house arrest, increasing the number of inmates on HEI by over tenfold (Cleary, 2021).

Bjiker (2017) summarizes the idea of the Social Construction of Technology (SCOT) by stating that technologies result from the interactions between various social groups. To understand why a technology exists in its current form, one must first identify the relevant social groups. Different social groups have different understandings of and needs from technology, and by analyzing how these different groups fit technology to their needs, researchers can begin to understand how technology was constructed by different social groups. Bjiker's idea of "interpretive flexibility" states that distinct groups view technology differently, affecting its development from these divergent perspectives. With this, we can observe the closure and stability of technologies – closure meaning how an artifact develops a certain state from different groups, and stability being the development of one artifact within a particular group (*ibid*). I plan to use SCOT to analyze how different social groups, such as criminal offenders, members of the Charlottesville judicial branch, representatives of the jail, public defenders, and law enforcement, shaped the use of HEI in the Charlottesville region. Each group sees the electronic monitoring technology serving a different purpose, and I am curious how exactly they see its purpose and have affected the way it is now used to supervise citizens.

RESEARCH METHODS

With the complexities of HEI on all sides of the criminal justice system in mind, and given the way ACRJ has increased its use so much, I would like to research the following question: how have different stakeholders in the Charlottesville region affected the use of HEI as an alternative incarceration method after the onset of the pandemic? To gather evidence, I plan to first define the different stakeholders. From an initial meeting with the ACRJ Superintendent, I understand that law enforcement, ACRJ, the commonwealth attorney's office, and judiciary all played a role in the allowing HEI pre- and post-pandemic, and form a solid initial base for relevant stakeholders (Kumer, personal communication, 2022). I will seek to better define these groups, identify more actors, and gather primary evidence by holding interviews with stakeholders in these groups of the criminal justice system. The interviews will aim to uncover how different groups feel about HEI, what power they have over its use, and how they would ideally see it implemented, see Appendix. With the evidence I collect, I plan to use the SCOT framework to analyze how these stakeholders influenced the use of HEI and discuss which stakeholders asserted the must power to determine its use.

CONCLUSION

With the effects of the pandemic on distinct subgroups of the incarcerated population unknown, analyzing jail and community resource databases could uncover any number of key insights for decision makers. Our analysis of ACRJ and R10 databases should uncover trends over time and differences (or lack there-of) between inmates with severe mental illness and the rest of the criminal population in the Charlottesville region. These insights will provide hard evidence to inform decision makers in the criminal justice system on decisions regarding this care-intensive subgroup. Gaining a better understanding of the criminal justice landscape of the

area, I will meet with key stakeholders to gain an understanding of how they influenced the use of HEI – a technology whose methods of practice are contested – after the onset of the pandemic. Analyzing how the current use of HEI compares to separate social groups' desired or intended use of HEI can shed light on how these groups interact and who has influence over technology ruling inmates in the region.

REFERENCES

Akiyama, M. J., Spaulding, A. C., & Rich, J. D. (2020). Flattening the Curve for Incarcerated Populations—Covid-19 in Jails and Prisons. *New England Journal of Medicine*, *382*(22), 2075–2077. https://doi.org/10.1056/NEJMp2005687

Bhadha, V., Clauson, M., Elican, J., Khan, F., Lawrenz, K., Pemberton, B., … Weisburd, K. (2021). *Electronic Prisons: The Operation of Ankle Monitoring in the Criminal Legal System* (p. 54). George Washington Law School.

Bijker, W. (2017). Constructing Worlds: Reflections on Science, Technology and Democracy (and a Plea for Bold Modesty). *Engaging Science, Technology, and Society*, *3*, 315. https://doi.org/10.17351/ests2017.170

Boland, E., O'Brien, C., Oliphant, J. H., Williams, J., Goodloe, N., Alonzi, L. P., … White, K. P. (2019). Evidence-Based Practice for Characterizing the Mentally-Ill Inmate Population. *2019 Systems and Information Engineering Design Symposium (SIEDS)*, 1–6. Charlottesville, VA, USA: IEEE. https://doi.org/10.1109/SIEDS.2019.8735652

Bureau of Justice Statistics (2017). *Justice Expenditures and Employment in the United States, 2017* (p. 17).

Burge, W., Levinson, C., Nardi, M., Lawrence, M., Wilby, J., & Kamauff, A. (2017, April). *Evidence-Based Decision Support for Managing the Mentally Ill Inmate Population*. Presented at the 2017 Systems and Information Engineering Design Symposium (SIEDS), Charlottesville, VA. Charlottesville, VA.

Chicknavorian, E. D. (1990). House Arrest: A Viable Alternative to the Current Prison System. *New England Journal on Criminal and Civil Confinement*, *16*(1), 53–63.

Cleary, I. (2021, October 7). Home incarceration program sees success at ACRJ. *NBC 29 WVIR*. Retrieved from https://www.nbc29.com/2021/10/07/home-incarceration-program-sees-success-acrj/

Eisen, L.-B., Grawert, A., & Merkl, T. (2020, April 6). *Letter: Governors' Executive Authority to Release Vulnerable People Who Pose No Risk to Public Safety from Incarceration*.

Grunwold, B. (2022). Toward an Optimal Decarceration Strategy. *Stanford Law & Policy Review*, *33*(1), 1–78.

KiDeuk, K., Becker-Cohen, M., & Serakos, M. (2015). *The Processing and Treatment of Mentally Ill Persons in the Criminal Justice System* (Research Report No. 1; p. 58). Urban Institute.

Kumer, M. (2022, September 15). *In-Person Interview with Martin Kumer by 2022 UVA Capstone Team* [In-Person].

Lilly, J. R., & Ball, R. A. (1987). Brief History of House Arrest and Electronic Monitoring. *Northern Kentucky Law Review*, *13*(3), 343–374.

Nealon, M. (2021, October 9). The Pandemic Accelerant: How COVID-19 Advanced Our Mental Health Priorities. *UN Chronicle*. Retrieved from https://www.un.org/en/un-chronicle/pandemic-accelerant-how-covid-19-advanced-our-mental-health-priorities

National Institute of Corrections. (n.d.). Evidence-Based Practices (EBP). Retrieved October 26, 2022 from https://nicic.gov/projects/evidence-based-practices-ebp

OAR. (2022). Criminal Justice Planning. Retrieved October 26, 2022 from http://www.oar-jacc.org/criminal-justice-planning.html

Palermo, G. B., Smith, M. B., & Liska, F. J. (1991). Jails versus Mental Hospitals: A Social Dilemma. *International Journal of Offender Therapy and Comparative Criminology*, *35*(2), 97–106. https://doi.org/10.1177/0306624X9103500202

Sawyer, W., & Wagner, P. (n.d.). *Mass Incarceration: The Whole Pie 2022*. United States: Prison Policy Initiative. Retrieved from Prison Policy Initiative website: https://www.prisonpolicy.org/reports/pie2022.html

Torrey, E. F. (1997). Chapter 3: Jails and Prisons. In *Out of the Shadows: Confronting America's Mental Illness Crisis* (Revised). New York, NY: John Wiley & Sons. Retrieved from https://www.pbs.org/wgbh/pages/frontline/shows/asylums/special/excerpt.html#ret8

Treatment Advocacy Center. (2014). *The Treatment of Persons with Mental Illness in Prisons and Jails: A State Survey* (p. 116)

APPENDIX

INTERVIEW QUESTIONS

1. How do you come into contact with Home Electronic Incarceration in your life/work/studies?

2. Why is HEI used as a form of punitive action?
    a. Why do you think Albemarle-Charlottesville counties use HEI?

3. What do you see as the main benefits of using HEI as opposed to another form of punishment?
    a. What modes of punishment would you say HEI substitutes for?
    b. What would you propose as an alternative to HEI?
4. How do you think HEI should ideally be used (if at all) in the corrections system?

5. How have you seen the use of HEI change over time?
6. How have you affected the use of HEI locally?

7. Do you see any issues with HEI?
    a. How could these issues be corrected, or their negative effects minimized?
8. How could the use of HEI be improved?

Figure 1. Questions to guide interview with relevant stakeholders (Rawson, 2022)