

**Understanding the Effects of the COVID-19 Pandemic on the Length of Stay For Inmates  
with a Severe Mental Illness**

(Technical Paper)

**Effects of Solitary Confinement on the Mental Health of Prisoners with a Previously  
Diagnosed Mental Illness**

(STS Paper)

A Thesis Prospectus Submitted to the  
Faculty of the School of Engineering and Applied Science  
University of Virginia • Charlottesville, Virginia  
In Partial Fulfillment of the Requirements of the Degree  
Bachelor of Science, School of Engineering

**Livia Hughes**

Fall, 2021

Technical Project Team Members

Joshua Dornfield

Imani Hankinson

Sarah Murphy

Ronica Perka

McBride Rawson

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

Advisors

Joshua Earle, Department of Engineering and Society

Loreto Peter Alonzi III, School of Data Science

Michael C. Smith, Department of Engineering Systems and Environment

Preston K. White, Department of Engineering Systems and Environment

## **INTRODUCTION**

Over half of inmates in regional jails will endure some form of mental health difficulty or service within a year (Aufderheide, 2014). Female inmates experience this 12 percent more than their male counterparts, with a total of 75 percent of female inmates dealing with mental health problems (Aufderheide, 2014). Moreover, inmates who experience mental health problems are 8 percent more likely to return to custody than those who have never experienced them (Bronson, 2017). To address these statistics, my technical project aims to understand how the COVID-19 pandemic is linked to the length of stay for inmates with severe mental illnesses (SMI) at the Albemarle-Charlottesville Regional Jail (ACRJ). Through investigation of my technical project, my STS approach to the thesis will consider how solitary confinement impacts the mental health of inmates who have a previous history of mental health conditions.

There is an important technical difference between regional jails and prisons, mainly dealing with the length of stay and the type of individual being held. Regional jails are typically used for short-term sentences of misdemeanor convictions (DCJS, 2010). Prisons, on the other hand, are institutions that are used for long-term sentences where individuals are typically convicted of a felony (Coyle, 2022).

Furthermore, it is important to explain what is meant by having SMI. Mental illness is a large bracket of health conditions, with SMI being a subset of illnesses within them. SMI results in functional impairment from mental, behavioral, or emotional disorders (HSRD, 2011). Rather than SMI being treated as binary, it is a spectrum with distinct diagnosis including major depression, schizophrenia, bipolar disorder, obsessive compulsive disorder, panic disorder, post-traumatic stress disorder, and borderline personality disorder (HSRD, 2011).

Solitary confinement, where an inmate is placed in a maximum security isolated cell, deprives the inmate from educational, vocational, or even rehabilitative programs—leaving the inmate in an extremely vulnerable condition (NCCHC, 2016). Furthermore, inmates who have been previously diagnosed with a mental illness are often placed into solitary confinement as they can be threats to the jail's safety (Halvorsen, 2018). These inmates with previous mental health issues can then experience exacerbated mental health symptoms due to their placement in solitary confinement, which would only lengthen their stay (NCCHC, 2016).

Moreover, prisoners that have a mental condition are more likely to recidivate than those who do not (Virginia Department of Corrections, 2022). Recidivism is calculated based on an individual's tendency to be re-convicted after a previous record of being incarcerated. These questions are extremely important to understanding where there are gaps in the jailing system in regards to mental health treatment, services, and care, and ultimately how these systems can be improved for future inmates.

The two projects are connected as both my technical project and STS project focus on the mental health of the criminally involved; however, these two projects approach this topic through two lenses. In my technical project, it looks at the mental health of inmates in the ACRJ; in my STS project, it looks at the mental health of inmates in prisons across America. Through investigation of the mental health of inmates in a regional jail, much can also be discovered about the mental health of inmates at larger prisons in America. This thesis will be completed over the course of one year, spanning the timeline from the Fall 2022 to Spring 2023 semesters. Protocols have already been submitted and approved by the Institutional Review Board (IRB) for my technical project, which will be applied to my STS project as well. Data analysis will be conducted during the Fall 2022 semester and continue into the Spring 2023 semester.

## **TECHNICAL PROJECT: Understanding the Effects of the COVID-19 Pandemic on the Length of Stay for Inmates with a Severe Mental Illness**

My technical project aims to identify issues and areas of improvement within the current mental health services connected to the criminal justice system. It is sponsored by the Thomas Jefferson Area Community Criminal Justice Board. The goal of my technical project is to support the ACRJ population's time in jail and transition into the greater Albemarle-Charlottesville community upon release from custody. This technical project is built on ten years of research and data collection with six previous technical project teams working on it. Through their research, the past technical project teams have identified best practices and management protocols based on evidence from the collected data and communication with sponsors of the project. This communication includes representatives from the ACRJ, the Brief Jail Mental Health Screener (BJHMS), the Central Virginia Regional Jail (CVRJ), the Offender's Aid and Restoration Program (OAR), Thomas Jefferson Area Coalition for the Homeless, Jefferson Area Community Corrections, Virginia District Nine Probation Office, and Region Ten Community Services (R10) (Corbin, 2022). Together, the ACRJ, CVRJ, OAR, and R10 work to understand and tackle the needs of incarcerated individuals who have screened in using the BJHMS tool (explained in *KEY TEXTS*) and the role that mental health plays, both during incarceration and after release.

The Albemarle-Charlottesville county was chosen by the National Institute of Corrections in June 2008 to be part of an initiative, where an Evidence Based Decision Making Team (EBDM) would be formed to apply research to improve the outcomes of the justice system (The Center for Effective Public Policy, 2015). Since its formation, the EBDM has worked with both R10 and the University of Virginia (UVA) technical project team to explore the inmate

population with a SMI at the ACRJ and identify areas for improvement. My technical project team will also explore the use of the BJHMS in the ACRJ. Using a grant from the National Institute of Justice, Policy Research Associates, Inc. developed the BJHMS to identify severe mental illnesses or acute psychiatric problems during the booking process for incoming detainees (Policy Research Associates, 2022).

The goals of this technical project have been broken down into actionable items for the Fall 2022 and Spring 2023 semesters. During the Fall 2022 semester, we will develop a working understanding of relevant data sets and references. Moreover, we will determine how the COVID-19 pandemic and the expansion of Medicaid coverage affected mental healthcare access in Charlottesville. Next, we will understand how access to community mental health resources affects patient outcomes, such as return to custody rate or mental well-being. We will explore relationships between length of custody, types of mental health services received, location, and other relevant data pertaining to inmates with mental health issues. Lastly, we will establish relationships with data owners and the community stakeholders mentioned above. During the Spring 2023 semester, we will identify ways to strengthen the relationship between correctional facilities and local mental health services. We will effectively communicate the analysis of data sets to community stakeholders. Lastly, recommendations will be made that address the needs of mentally ill patients without adding additional strain to the community criminal justice system.

I have also established my technical project deliverables and timeline. The first presentation to the EBDM Team will occur in December 2022. In February, 2023, my technical project abstract will be finalized. In April, 2023 the first presentation to the Community Criminal Justice Board will occur. Later that month, the final presentation will happen at the Systems and

Information Engineering Design Symposium (SIEDS). Lastly, in May, 2023, the final presentation to the EBDM Team will occur.

My technical project will be led by Preston K. White, Jr., an Emeritus Professor in the Engineering Systems and Environment department, Michael C. Smith, a Lecturer in the Engineering Systems and Environment department, Loreto Peter Alonzi, an Assistant Professor in the School of Data Science, and Neal Goodloe, a Criminal Justice Planner for the Thomas Jefferson Area Community Criminal Justice Board (CCJB). My technical project will be conducted over the course of one year. The other team members on this project include Joshua Dornfield, Imani Hankinson, Sarah Murphy, Ronica Peraka, and McBride Rawson who are all fourth year Systems Engineering majors at UVA School of Engineering and Applied Sciences. The outcome of the project will be specific recommendations about important issues and best practices for the ACRJ's population of inmates with a SMI.

### **STS PROJECT: Effects of Solitary Confinement on the Mental Health of Prisoners with a Previously Diagnosed Mental Illness**

My STS project will explore the science of solitary confinement and mental health. In state prisons, between 30 and 50 percent of inmates in solitary confinement have a mental illness and being placed in solitary confinement can intensify the mental disorders of these inmates (Halvorsen, 2018; NCCHC, 2016).

Within this science, subtopics of the BJHMS tool and recidivism will also be explored. The BJHMS tool is used to identify inmates who suffer from a severe mental illness or acute psychiatric problem during the booking process (Policy Research Associates, 2022). Recidivism is a number that is calculated based on an individual's tendency to be re-convicted after a

previous record of being incarcerated. Recidivism is an important topic to examine for my STS project as inmates that have been screened in with a mental health condition are more likely to recidivate than those who have been screened out (Virginia Department of Corrections, 2022).

The overarching research question in my STS project is what effects does solitary confinement have on the mental health of prisoners with a previous mental health diagnosis. This is an important research question as there are gaps in the treatment, ethics, and outcomes of prisoners with a mental illness in solitary confinement.

The relevant social groups to my STS project have been broken into three categories: inmates, prison employees, and the United States government. These three categories of people each bring a unique perspective to the topic of solitary confinement for prisoners with a mental illness. A social group that might be relevant, but that is being left out is the American people. While this social group will have a unique perspective on both mental health, the use of solitary confinement, and the use of solitary confinement on prisoners with a mental illness, it is not a factor that will be considered in my STS project as public perception will not impact the findings of the project.

The category of inmates will include all incarcerated individuals, regardless of their status on being screened in or out for mental health conditions. It is important to look at both of these categories of inmates for the project, rather than solely individuals with a mental illness, as each category of inmates will have a unique perspective and experience with the topic. Together, these two perspectives will create a more well-rounded characterization of the experience in solitary confinement. Prison employees are an important social group to consider for this project as they are the people who send prisoners with a mental illness to solitary confinement and are able to observe them during their stay. This social group will bring a 'big picture' interpretation

of the topic as they have first-hand experience dealing with prisoners with a mental illness in solitary confinement. Lastly, The United States government is integral to this project as they define the regulations and practices for prisoners in solitary confinement. Understanding why regulations have been put in place and the history behind them will be beneficial to analyzing how they are actually executed in practice.

The STS framework that will be used for this research is risk analysis. Risk analysis is a framework that investigates and evaluates any issues that have a potential negative impact on an organization. The use of solitary confinement on prisoners with a mental illness poses risks for not only the prisoner themselves, but also for the employees caring for them. A risk analysis framework can be used to understand the risks associated with placing prisoners with a mental illness into these conditions, measure and assess the impact of these risks, and understand the effects that it has on the mental health of inmates. Two STS research methods will also be used for this project: history and philosophy, and public policy analysis. History and philosophy, where previous literature is found, read, and synthesized, will be used to examine previous studies about both solitary confinement and mental health of prisoners. Policy analysis, which consists of studying policy documents such as laws or institutional guidelines, will be used to understand current practices and regulations in regards to both solitary confinement as well as the treatment and care for prisoners with a mental illness.

The timeline for this project will begin by gaining an understanding of the background and history of solitary confinement and current politics, as well as understanding how prisoners with a mental illness are currently treated in prisons. Next, an understanding of the stakeholders and social groups that are involved with these processes will be explored. After that, the effects of solitary confinement on mental health will be investigated, as well as connecting this analysis



to alternate options to solitary confinement for these prisoners with a mental illness, and how it impacts recidivism and worsened mental health problems.

## **KEY TEXTS**

The first primary source for my STS project is the brief jail mental health screen (Policy Research Associates, 2022). The BJHMS is an eight-question tool that is used during the booking process at jails and determination centers. It ultimately serves to determine which individuals need to be taken for further mental health evaluation by identifying severe mental illnesses or acute psychiatric problems (Policy Research Associates, 2022). A nurse, or medical professional, employed by the ACRJ administers the screener to incoming detainees after at least 24-hours of being in holding, but before processing. This tool is integral to both my technical and STS projects as it is the single tool that separates prisoners with a mental illness from inmates that are ‘screened out.’ Inmates that are ‘screened in’ using this tool—meaning they suffer from a severe mental illness or acute psychiatric problem—are the inmates whose data will be used for the bulk of the analyses in my technical project. Moreover, the inmates that will be investigated in my STS project are solely those who have been screened in using this tool.

The second primary source is this technical project’s 2022 team SIEDS paper (Corbin, 2022). In this research paper, the team investigated “Administered Differences of Brief Jail Mental Health Screener and Impacts of Diagnoses and Treatment of Linked Inmates with Severe Mental Illness” (Corbin, 2022). Here, they dove into the BJHMS tool mentioned above and drew key conclusions about the external factors—such as race, gender, prior treatment, and location—that contribute to an inmate's likelihood to screen in (Corbin, 2022). This is key to both my technical and STS project arguments because these correlations need to be factored into the data analysis. As these correlations have not been considered in the five preceding technical projects

for this topic, this source is key to drawing new conclusions about the data for both my technical and STS projects.

The third primary source is a journal article from a University of Southern California Gould School of Law student about solitary confinement of prisoners with a mental illness (Halvorsen, 2018). This journal aims to identify best practices for these prisoners with a mental illness and dives into pertinent statistics and insights, such as the fact that between 30 and 50 percent of inmates in solitary confinement at state prisons are mentally-ill (Halvorsen, 2018). This source will be extremely beneficial to my STS project portion of the STS Paper by providing both background information and data that can inform the project.

The fourth primary source is a research paper from the Journal of the American Academy of Psychiatry and the Law about solitary confinement and mental illness in prisons, specifically looking at medical ethics (Metzner, 2010). This research paper explores how solitary confinement has been historically used to “manage difficult or dangerous prisoners,” specifically those with mental illness (Metzner, 2010). This paper will be important to my STS project as it will provide context to how prisoners with a mental illness have been treated in solitary confinement in U.S. prisons, the psychological consequences that impact the prisoners, and the ethics that are involved. As ethics have not been explored by any other source thus far, this research paper will bring in a different lens than any of the other sources.

## Works Cited

- Aufderheide, D. (2014). *Mental illness in America's jails and prisons: toward a public safety/public health model*. Health Affairs, vol. 33, no. 3. Retrieved from <https://www.healthaffairs.org/doi/10.1377/forefront.20140401.038180>.
- Policy Research Associates, Inc. (2022, June 8). *Brief jail mental health screen*. Policy Research Associates. Retrieved from <https://www.prainc.com/product/brief-jail-mental-health-screen/>
- Bronson, J. and Berzofsky, M. (2017). *Indicators of mental health problems reported by prisoners and jail inmates, 2011-12*. Washington DC, USA, NCJ Report No. NCJ250612. Retrieved from <https://bjs.ojp.gov/content/pub/pdf/imhprpji1112.pdf>
- The Center for Effective Public Policy. (2015, December 27). *Charlottesville-Albemarle County, Virginia*. EBDM: The Evidence Based Decision Making in State and Local Criminal Justice System Initiative. Retrieved from <https://ebdmoneless.org/charlottesville-albemarle-county-virginia/>.
- Corbin, G. et al. (2022). *Evaluating Administered Differences of Brief Jail Mental Health Screener and Impacts of Diagnoses & Treatment of Linked Inmates with Severe Mental Illness*. 2022 Systems and Information Engineering Design Symposium (SIEDS). Retrieved from <https://ieeexplore.ieee.org/document/9799360>
- Coyle, A. G. (2022, March 21). *Prison*. Encyclopædia Britannica. Retrieved from <https://www.britannica.com/topic/prison>
- DCJS. (2010). *Virginia's Peculiar System of Local and Regional Jails*. Virginia Department of Criminal Justice Services. Retrieved from <https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/virginiass->

peculiar-system-local-and-regional-jails.pdf

Halvorsen, Ashley. (2018, February 27). *Solitary Confinement of Mentally Ill Prisoners*.

University of Southern California Gould School of Law, Southern California

Interdisciplinary Law Journal.

HSRD. (2011, October). *Health Services Research & Development Spotlight: Serious Mental*

*Illness*. U.S. Department of Veterans Affairs. Retrieved from

<https://www.hsrp.research.va.gov/news/feature/smi.cfm?ID=995>

Metzner, Jeffrey L., and Jamie Fellner. (2010, March 1). *Solitary Confinement and Mental*

*Illness in U.S. Prisons: A Challenge for Medical Ethics*. Journal of the American

Academy of Psychiatry and the Law Online. Retrieved from

<https://jaapl.org/content/38/1/104>.

National Commission on Correctional Health Care (NCCHC). (2022, May 16). *Solitary*

*Confinement (Isolation)*. NCCHC. Retrieved from [https://www.ncchc.org/solitary-](https://www.ncchc.org/solitary-confinement-isolation-2016/)

[confinement-isolation-2016/](https://www.ncchc.org/solitary-confinement-isolation-2016/).

Virginia Department of Corrections, VADOC. (2022, March). *VADOC Recidivism - Virginia*

*Department of Corrections*. VADOC - Research-Evaluation Unit. Retrieved from

[https://www.vadoc.virginia.gov/media/1748/vadoc-recidivism-summary-report-2022-](https://www.vadoc.virginia.gov/media/1748/vadoc-recidivism-summary-report-2022-03.pdf)

[03.pdf](https://www.vadoc.virginia.gov/media/1748/vadoc-recidivism-summary-report-2022-03.pdf).