February 1, 2023

Evaluation of community mental health and addiction treatment use in individuals following release from incarceration or on community supervision, Connecticut, 2018-2022
Draft scope and proposal for research study

Connecticut Sentencing Commission/UConn IMRP/Yale SEICHE Center

Background

The Connecticut Sentencing Commission (CSC), in a response to a request from Senator Catherine Osten in 2019, has produced two reports regarding prevalence of mental health and substance use disorders in people incarcerated by the Connecticut Department of Correction (CT DOC). This proposal lays out a plan to expand on these prior reports to evaluate how people with mental health and substance use disorders engage and access mental health and substance use treatment in the community and interact with criminal justice entities after release to the community or while on community supervision (probation/parole).

Mental health and substance use disorders are common among people incarcerated in our nation's prisons and jails and more prevalent in incarcerated populations compared to the general population. National estimates of the prevalence of mental health disorders in incarcerated populations range from 20%-44% with typically higher prevalence in pre-sentence (jail) populations compared to post-sentence (prison) populations.[1] Similarly, prevalence of substance use disorders are higher in incarcerated populations than the general population: 59% in prison populations and 63% in jail populations.[2,3] The prevalence of mental health and substance use disorders is even higher among people incarcerated by the CT DOC with 81% of people incarcerated in the CT having an active mental health or substance use disorder: 32% with an active mental health disorder and 74% with substance use disorder requiring active treatment.

Over 95% of people who are incarcerated eventually return to the community. National estimates are that 25% of community-dwelling adults with a history of criminal justice involvement have a mental health disorder and 35% have a substance use disorder.[4,5] To date, there are no good estimates of the prevalence of mental health and substance use disorders in community-dwelling adults in Connecticut with a history of incarceration or on community supervision.

People released from incarceration have a high risk of death and hospitalization, largely driven by sequelae of mental health and substance use disorders. The risk of death in the first two weeks following release from prison is over 12 times higher than the general population with drug overdose, suicide, and homicide are among the leading causes.[6] Similarly, people released from prison are twice as likely to be hospitalized than the general population in the year after release, with high rates of hospitalization for mental health and substance use disorders.[7] It is also likely that undertreated mental health and substance uses disorders in this population are associated with increased likelihood of recidivism, unemployment, and inability to achieve other important goals following transition back to the community.

The poor outcomes, both health and non-health related, are likely related to the significant barriers that individuals face while returning to the community or while on

community supervision, both with respect to accessing treatment for mental health and substance use disorders but also high rates of housing instability, food insecurity, and social isolation.[8] These barriers are also exacerbated by the challenge related to the transition from receiving mental health and substance use treatment in correctional settings to treatment from community providers. To date, there are no good estimates of the percentage of community-dwelling people released from CT DOC or under community supervision who engage with mental health or substance use treatment. In addition, there are no estimates of recidivism in people with identified mental health and substance use disorders and how the risk of recidivism is related to treatment use while incarcerated or in the community.

The goal of this proposal is to fill these important data gaps to provide a more holistic picture of the experience of people with mental health and substance use disorders in the community before entry into CT DOC, following release from the CT DOC, or while on community supervision.

Objective 1: To merge datasets collected by state agencies (DOC, DMHAS, DSS, DPH, CSSD) and match individual identifiers to create a longitudinal, individual-level dataset of community mental health and addiction treatment use, criminal justice outcomes, and health outcomes for individuals released from CT DOC into the community or on community supervision (probation or parole) from January 1, 2018 through December 31, 2022. (Quantitative, 6-month Aim)

Objective 2: To explore factors identified by individuals with mental health and substance use disorders and community treatment providers that contribute to engagement and quality of mental health and addiction treatment in people released from CT DOC or on community supervision (probation or parole). (Qualitative, 6-month aim)

Objective 3: Among individuals released from CT DOC into the community between January 1, 2018 through December 31, 2022, to analyze relationships over time between mental health and substance use disorder diagnoses, demographics, treatment use, and interactions with the criminal justice system in the year following release. (Quantitative, 12-month aim)

Objective 4: Among individuals on community supervision (probation or parole) in Connecticut between January 1, 2018 through December 31, 2022, to analyze relationships over time between mental health and substance use disorder diagnoses, demographics, treatment use, and interactions with the criminal justice system. (Quantitative, 12-month aim)

Knowledge gained from this research will enhance the understanding of how individuals with mental health and substance use disorders interact with the correctional and mental health treatment systems. These results will provide insights to policymakers on how to improve mental health and substance use treatment with a goal of improving both public safety and mental health outcomes.

Research approach (Objectives 1, 3 & 4)

We will construct two retrospective cohorts of individuals with mental health or substance use disorders who have been incarcerated by the CT DOC and released to the

community or were under community supervision between January 1, 2018 through December 31, 2022. One cohort will be limited to people released from the CT DOC and the second cohort will be of individuals on community supervision. For these cohorts we will construct a novel, multi-source, linked set of administrative data collected by the CT DOC, DMHAS, DSS, DPH, and CSSD.

Data sources

Our team identified the following administrative data sets to link to capture cohort entry, community mental health and addiction treatment, criminal justice outcomes, and health outcomes. A listing of data sets and data elements included are the following:

Table 1: Administrative data sources merged for protocol

Agency/Dataset	Data elements	Years available
DOC	Demographics, incarceration dates, community supervision (parole) dates, charges, sentencing information, mental health/substance use treatment need classifications	2018-2022
DOC Health Services	Mental health/substance use disorder diagnoses, mental health/substance use disorder treatment	TBD
DMHAS	DMHAS-reported community mental health and substance use treatment	2012-2022
DSS	Medicaid claims for community mental health and substance use treatment; inpatient hospitalizations	TBD
CSSD	Community supervision (probation)	TBD
DPH/Vital Records	Death records (date, cause of death, location)	TBD
TBD	Arrest data	TBD

Study Populations

We will construct two cohorts of individuals with criminal justice contact.

Post-release cohort: We will include all individuals incarcerated CT DOC and released to the community between January 1, 2018 and December 31, 2022.

Community supervision cohort: We will include all individuals on community supervision in Connecticut between January 1, 2018 and December 31, 2022. This will include individuals on probation as managed by the Connecticut Judicial Branch/CSSD and individuals on parole as managed by the CT DOC.

Record matching and linking

Our team has extensive experience using Connecticut administrative data sets to create per-subject linked data sets for policy evaluation. To create a per-subject profile of exposures and outcomes, we will use public domain software program that integrates both probabilistic and deterministic matching algorithms (The Link King V9, www.the-link-king.com) to identify and match individual records across multiple agencies using all available demographic identifiers (name, DOB, SSN) and geographic information, such as residential address and zip

code. The deterministic protocol ascertains whether record pairs matched or did not match on a set of established criteria. All data merging and matching will occur behind the Connecticut state agency firewall and in concordance with data safety and privacy practices from the agencies responsible for the data used.

After data set merging and matching is completed, a unique identifier will be created for each individual subject, individual identifiers will be stripped, and an analytical data set will be created. For analytical purposes, this data set will be shared with the research team at Yale University in concordance with data safety and privacy practices from the agencies responsible for data included in the data set.

Data storage plan

All data with identifiable information will be stored on secure, password protected servers behind the Connecticut state agency firewall. For analysis purposes, a de-identified dataset will be constructed and shared with the research team based at Yale University. This dataset will also be stored on secure, password protected servers.

Ethical and privacy considerations

The research plan will be submitted to the Yale University Institutional Review Board for approval. No individual identifiable data will be shared outside of the research team and all results will be presented as aggregated estimates. Results will be suppressed if pre-specified thresholds that would endanger privacy are not met.

Analytical plan

Within the merged and linked data set, our first objective will be to identify and categorize individuals with possible mental health or substance use disorder treatment needs. For all individuals included in our study we will identify use of mental health or substance use treatment by community providers using DMHAS and DSS/Medicaid data. For individuals released from the CT DOC, we will also use mental health care need and substance use treatment need classifications at time of discharge captured in DOC administrative data. Mental health treatment need classification from the DOC range from MH-1 (no history of mental health disorder) through MH-5 (crisis-level mental health disorder). Substance use treatment needs are classified separately as “Substance Abuse Treatment Need Classification” ranging from T-1 (no substance abuse problem) through T-5 (extremely serious substance use problem). If feasible, we will supplement this data with mental health diagnostic codes generated by DOC health care providers while individuals are incarcerated in the DOC.

Using this data we will be able to construct several different, not mutually exclusive cohorts of individuals:

- Individuals with mental health treatment need classifications (MH-2 – MH-5) at discharge from the DOC
- Individuals with substance use treatment need classifications (T2 – T5) at discharge from the DOC
- Individuals on community supervision (but not incarcerated) who have received mental health treatment from DMHAS or Medicaid claims identified sources

- Individuals on community supervision (but not incarcerated) who have received substance use treatment from DMAS or Medicaid claims identified sources

We will then undertake analysis of the data to describe demographics, community mental health and addiction treatment use, and criminal legal outcomes for people included in our cohort as distinguished by sentencing, incarceration duration, and community supervision status as well as mental health care need and substance use treatment need classifications. The second step will include developing statistical models to describe associations between DOC and community exposures (i.e., treatment, incarceration length, charges, demographics) and longitudinal mental health/substance use and criminal legal outcomes. The approach we will take for this analysis is yet to be determined, though our team has extensive experience using a variety of statistical methods to analyze longitudinal administrative data of this sort.

Research approach (Objective 2)

We will conduct a series of individual, semi-structured qualitative interviews of people who were formerly incarcerated in the CT DOC or under community supervision (probation/parole) and diagnosed with a mental health disorder and/or substance use disorder, with a goal of gaining a deeper understanding of the participants' mental health and substance use needs, mental health and substance use treatment received while incarcerated in the CT DOC and while on probation or parole, and reentry services received upon release to the community. Our goal is to understand facilitators and barriers to the use of community mental health and addiction treatment by people released from CT DOC. We will explore the specific types of mental health treatment provided for people who are incarcerated in the CT DOC and under community supervision, with a goal of identifying the types of treatment currently provided and potential gaps in needed treatment and areas for improvement. Qualitative interviews will allow for a deeper understanding of each participant's individual experience with mental health treatment while incarcerated and under community supervision. Qualitative interviews will also allow for an exploration of participants' therapeutic relationship with treatment providers (i.e., the therapeutic alliance), which is one of the strongest predictors of efficacy of both mental health and substance use treatment.[9,10]

Additionally, we will conduct a series of focus groups with clinicians who provide mental health and substance use treatment both in the CT DOC and in the community for individuals returning home from incarceration in CT. The focus groups will focus on several topics, including: transitions of care from the DOC to community agencies; challenges and barriers to accessing mental health and substance use treatment for people in the CT DOC and people returning home from incarceration; and suggestions for ways of improving access to mental health and substance use treatment for this population.

Study Population

We will interview individuals diagnosed with a mental health or substance use disorder while incarcerated by CT DOC and released to the community after January 1, 2018. We will also consult stakeholders and community partners in Connecticut while designing the semi-

structured interview guide, including mental health and substance use treatment providers, people who are formerly incarcerated in the CT DOC, and legal professionals.

Data Collection

Our team will conduct semi-structured interviews of individuals diagnosed with a mental health or substance use disorder while incarcerated by CT DOC and released to the community after January 1, 2018. We will collaborate with stakeholders and community partners to design the semi-structured interview guide, including mental health and substance use treatment providers, people who are formerly incarcerated in the CT DOC, and legal professionals (including public defenders). In terms of sample size, we will conduct interviews until we reach saturation (i.e., participants describe the same themes and we cease to find new themes, ideas, or patterns), which is "the gold standard" for determining purposive sample sizes in health science research.[11,12] Topics that will be included in the semi-structured interview guide include: mental health experiences while incarcerated and following release; facilitators and barriers to mental health and substance use treatment while incarcerated; reentry services received upon release, including mental health and substance use treatment, housing support, and employment services.

Our team will also conduct a series of focus groups with clinicians who provide mental health and substance use treatment within the CT DOC and in the community for individuals returning home from incarceration in CT. Topics that will be included in the focus group semi-structured interview guide include: transitions of care from the DOC to community agencies; challenges and barriers to accessing mental health and substance use treatment for people in the CT DOC and people returning home from incarceration; and suggestions for ways of improving access to mental health and substance use treatment for this population.

Analytical plan

All interviews and focus groups will be recorded and transcribed verbatim and identifying data will be redacted. Transcripts will be uploaded into Dedoose, an online, qualitative analysis software that allows research teams to organize and analyze data and provides electronic security measures to protect study data. We will use a rapid qualitative analysis approach, which is a rigorous, applied method used to obtain actionable, targeted qualitative data on a shorter timeline than traditional qualitative methods.[13-15] Rapid qualitative analysis involves an iterative design, in which data collection and analysis occur in parallel to maximize efficiency and allow for rapid dissemination of findings and recommendations. Our multidisciplinary team will work interactively to develop index codes and themes across all transcripts, and to develop recommendations based upon the results.

Proposed Timeline

	0-3 Months (Feb '22-Apr '22)	5-6 Months (May '22 – June '22)	6-12 Months (July '22-Dec '22)

Objective #1			
Establish MOU/DUAs	X		
Merge/Link data sets	X	X	
Generate descriptive data		X	
Generate preliminary report for CSC		X	
Objective #2			
Finalize qualitative research plan	X		
Perform Interviews/Focus Groups	X	X	
Analysis		X	X
Generate preliminary report for CSC		X	
Generate final report for CSC			X
Objective #3			
Finalize analysis plan		X	
Perform longitudinal analysis			X
Generate final report for CSC			X

Research team and roles:

Benjamin A. Howell, MD, MPH, MHS (Assistant Professor, SEICHE Center for Health and Justice, Yale School of Medicine): Yale-based project lead. Dr. Howell's responsibilities will include coordinating activities of the Yale-based evaluation team, corresponding to the CSC, generating updates and reports on evaluation activity. He will also take a primary role in designing and conducting the statistical analysis of the longitudinal linked administrative data for this project (Objective #1, Objective #3, and Objective #4).

Kathryn Thomas, JD, PhD (Postdoctoral Fellow and Associate Research Scholar, SEICHE Center for Health and Justice, Yale School of Medicine; The Justice Collaboratory, Yale Law School): Dr. Thomas will be the lead Yale-based researcher developing and implementing the qualitative evaluation of the experience of individuals and providers navigating post-release community mental health and addiction treatment (Objective #2). She will also contribute to updates and reports generated for the CSC.

Hsiu-ju Lin, PhD (Associate Research Professor, School of Social Work, UConn; CT DMHAS): Dr. Lin will access, merge, and link the administrative data identified for this project in Objective #1 and Objective #3. She will also collaborate on any analyses, either in a primary role, or in a secondary role, via provision of de-identified data for Yale-based researchers, for the final reports created for this project.

Alex Tsarkov (Connecticut Sentencing Commission, IMRP, UConn)
Patricia O'Rourke (Connecticut Sentencing Commission, IMRP, UConn)

Mr. Tsarkov and Ms. O'Rourke will be primary liaisons with the Connecticut Sentencing Commission and the UConn IMRP.

Emily A. Wang, MD, MAS (Professor, SEICHE Center for Health and Justice, Yale School of Medicine)
Lisa Puglisi, MD (Assistant Professor, SEICHE Center for Health and Justice, Yale School of Medicine)
Reena Kapoor, MD (CMHC, Department of Psychiatry, Yale School of Medicine)
Andrew Clark (IMRP, UConn)
Drs. Wang, Kapoor, and Puglisi and Mr. Clark will provide consultation and feedback on the plan, conduct, and interpretation of the proposed analysis.

Shell Tables:

Table 1: Mental health and substance use treatment need classifications at time of discharge from CT DOC for individuals released to community from Jan 1, 2018 through Dec 31, 2022

Treatment classification at discharge from DOC	N (%)
MH-2	
MH-3	
MH-4	
MH-5	
MH-3+	
T-2	
T-3	
T-4	
T-5	
T-3+	

Table 2: Demographics differences of individuals released from DOC with mental health and substance use treatment need classifications indicating need for active treatment at time of discharge

Demographics	All	MH-3+	T-3+
Age (median, IQR)			
Sex			
Male			
Female			
Race and Ethnicity			
Black, non-Latino			
White, non-Latino			
Latino			
Other			
Medicaid coverage			

Table 3: Demographics differences of individuals on community supervision (but not incarcerated) across groups engaging with DMHAS/Medicaid captured mental health and substance use treatment

Demographics	All	Substance use treatment (any)	Mental Health treatment (any)

Age (median, IQR)			
Sex			
Male			
Female			
Race and Ethnicity			
Black, non-Latino			
White, non-Latino			
Latino			
Other			
Medicaid coverage			

Table 4: Use of community mental health resources by criminal legal exposure group

Demographics	Post-release (all)	Post-release w mental health tx need at discharge (MH-3+)	Post-release w substance use tx need at discharge (MH-3+)	Community Supervision (w/o incarceration
Any community mental health treatment				
Inpatient				
Outpatient				
Medicaid-reimbursed				
Any community substance use treatment				
Inpatient				
Outpatient				
MOUD				
Medicaid-reimbursed				

Table 5: Timeliness of community mental health and substance use treatment following release from DOC for individuals with identified mental health and substance use treatment needs at time of discharge

	Post-release (all)	Post-release w mental health tx need at discharge (MH-3+)	Post-release w substance use tx need at discharge (MH-3+)
No community mental health treatment			
Median time to any mental health treatment (days, IQR)			
Any mental health treatment within 30 days of release			
DMHAS-identified mental health treatment within 30 days of release			
Medicaid-reimbursed mental health treatment within 30 days of release			
No community substance use treatment			
Median time to any substance use treatment (days, IQR)			
Any substance use treatment within 30 days of release			
DMHAS-identified substance use treatment within 30 days of release			
Medicaid-reimbursed substance use treatment within 30 days of release			

References

1. Bronson J, Berzofsky M. Indicators of mental health problems reported by prisoners and jail inmates, 2011–12. *Bureau of Justice Statistics*. 2017:1-16.
2. Mumola CJ, Karberg JC. *Drug use and dependence, state and federal prisoners, 2004*. US Department of Justice, Office of Justice Programs, Bureau of Justice …; 2006.
3. Bronson J, Stroop J, Zimmer S, Berzofsky M. Drug use, dependence, and abuse among state prisoners and jail inmates, 2007–2009. *Washington, DC: United States Department of Justice, Office of Juvenile Justice and Delinquency Prevention*. 2017;
4. Howell BA, Wang EA, Winkelman TNA. Mental Health Treatment Among Individuals Involved in the Criminal Justice System After Implementation of the Affordable Care Act. *Psychiatric Services*. 2019/09/01 2019;70(9):765-771. doi:10.1176/appi.ps.201800559
5. Hawks L, Wang EA, Howell B, et al. Health Status and Health Care Utilization of US Adults Under Probation: 2015-2018. *Am J Public Health*. 09 2020;110(9):1411-1417. doi:10.2105/AJPH.2020.305777
6. Binswanger IA, Stern MF, Deyo RA, et al. Release from prison--a high risk of death for former inmates. *N Engl J Med*. Jan 2007;356(2):157-65. doi:10.1056/NEJMsa064115
7. Wang EA, Wang Y, Krumholz HM. A high risk of hospitalization following release from correctional facilities in Medicare beneficiaries: a retrospective matched cohort study, 2002 to 2010. *JAMA internal medicine*. 2013;173(17):1621-1628.
8. Howell BA, Puglisi L, Clark K, et al. The Transitions Clinic Network: Post Incarceration Addiction Treatment, Healthcare, and Social Support (TCN-PATHS): A hybrid type-1 effectiveness trial of enhanced primary care to improve opioid use disorder treatment outcomes following release from jail. *Journal of Substance Abuse Treatment*. 2021/01/29/ 2021:108315. doi:https://doi.org/10.1016/j.jsat.2021.108315
9. Meier PS, Barrowclough C, Donmall MC. The role of the therapeutic alliance in the treatment of substance misuse: a critical review of the literature. *Addiction*. Mar 2005;100(3):304-16. doi:10.1111/j.1360-0443.2004.00935.x
10. Wampold BE. How important are the common factors in psychotherapy? An update. *World Psychiatry*. Oct 2015;14(3):270-7. doi:10.1002/wps.20238
11. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant*. 2018;52(4):1893-1907. doi:10.1007/s11135-017-0574-8
12. Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field methods*. 2006;18(1):59-82.
13. Gale RC, Wu J, Erhardt T, et al. Comparison of rapid vs in-depth qualitative analytic methods from a process evaluation of academic detailing in the Veterans Health Administration. *Implementation Science*. 2019/02/01 2019;14(1):11. doi:10.1186/s13012-019-0853-y
14. Watkins DC. Rapid and Rigorous Qualitative Data Analysis: The "RADaR" Technique for Applied Research. *International Journal of Qualitative Methods*. 2017/12/01 2017;16(1):1609406917712131. doi:10.1177/1609406917712131
15. Taylor B, Henshall C, Kenyon S, Litchfield I, Greenfield S. Can rapid approaches to qualitative analysis deliver timely, valid findings to clinical leaders? A mixed methods study comparing rapid and thematic analysis. *BMJ Open*. 2018;8(10):e019993. doi:10.1136/bmjopen-2017-019993