SPOTLIGHT

Rhode Island's Cross-agency Analysis on the Overdose and Addiction Crisis

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The Rhode Island Executive Office of Health and Human Services (RI EOHHS) Data Ecosystem integrates person-level data across 15+ programs and external data sources to improve program performance, inform policy decisions, and answer questions about what drives well-being. This Spotlight describes analysis and action undertaken in Rhode Island in response to the overdose and addiction crisis that would not have been possible without the Ecosystem's integrated data capacity. To learn more about the evolution of their effort, check out the *AISP Case Study: How the Rhode Island EOHHS Ecosystem Leverages Federal Funding to Support State Data Capacity*.

Introduction

Across the U.S., states continue to grapple with the effects of widespread addiction, overdose, and drug-related deaths. Rhode Island saw a spike in deaths in 2016: 336 lives lost to overdose and countless others impacted by the loss. In response, the state committed to using evidence to better understand both the drivers and impacts of drug use in their community. Beginning in 2017 with federal Medicaid dollars, Rhode Island's Data Ecosystem team began to develop data linkages and a data model designed to support a more coordinated and holistic approach to the state overdose response.

Below, we walk through four stages of work undertaken by Rhode Island. For each stage, we discuss the rationale, unique data sets involved, and resulting findings and policy changes that have helped to improve services and save lives. Each stage of work was developed from the initial data model created in 2018 and generated a cycle of learning and improvement. The model evolved substantially as Rhode Island learned more about addiction and overdose—such as how the focus on *opioid use disorder* is limiting when trying to reduce opioid (including fentanyl) related deaths. The foundational work in stages one through three prepared Rhode Island to respond to an increase in deaths in 2020 during the COVID-19 pandemic. This evolution highlights the need for a flexible and continuous learning approach for any size or length of project—but especially for more complex, iterative efforts.

> **"It's our job to paint rich pictures of our community's strengths and relationships and unmet needs so we can respond to the whole person, not the symptoms we think we see."**
>
> —Kim Paull, Director of Analytics, Rhode Island EOHHS

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Stage 1: Child Maltreatment and Substance Use Disorder

Rationale

Sadly, between 2016 and 2018, there were 36 child deaths or near deaths related to abuse and neglect in Rhode Island. After the state did an intensive case-level review, leaders asked the Ecosystem team to help them understand the bigger picture for young kids: what do the data say about patterns in child abuse and neglect for children under 6?

The Ecosystem team and subject matter experts from across the state set out to understand the broader trends that might be behind the horrifying fatalities and near-fatalities, where in over half of the cases, child welfare services never had contact with the child or family. While there is ample empirical literature on this subject, the state wanted to better understand local dynamics and explore how they might better support families to keep children safe. To do so, they conducted an analysis of linked data across the five state agencies listed below to determine which risk factors, for both parent and child, increase the likelihood of maltreatment and how the state can better support parents who may need extra help.

The data development and the study, funded through the Enhanced CMS Federal Financial Participation (aka Medicaid Match) and the Medicaid State Innovation Models (SIM) Initiative respectively, illuminated key protective factors, including the state's role in supporting *families* and not just individual adults who may seek support. It also showed how medication-assisted treatment (MAT) for opioid use disorder can keep both adults *and kids* safe.

Data Sources

- Medicaid
- Department of Children, Youth & Families
- Department of Human Services (SNAP, TANF, CCAP)
- Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals as subject matter experts and for comparison data
- Department of Health KIDSNET (birth certificates, immunizations, risk assessments at birth, child development screenings, lead screening, etc.)

Stage 1

Findings

The integrated data analysis showed that:

- Poverty matters—Family and neighborhood income were highly correlated with risk of maltreatment,
- But not all poor families experience abuse—the risk of child maltreatment was significantly increased by severe mental illness and parental substance use.
- Enrolling in MAT was correlated with a much lower child maltreatment rate.
- Kids who frequently missed doctor's appointments were also at a higher risk of experiencing maltreatment.

Impact

Because results clearly demonstrated that families need support, not punishment, the state made changes to their maltreatment prevention, including:

- The adoption of a family-based approach to child safety that connects parents to mental health and substance use supports.
- Increased attention to coordination between child primary care teams and adult care teams.

As outlined in the following three stages, these initial findings led to numerous studies that supported enrollment and engagement in this life-saving service.

Stage 2: Impact of Medication Assisted Treatment (MAT)

Rationale

Following the work in maltreatment prevention, Rhode Island's Ecosystem leveraged a Substance Abuse and Mental Health Services Administration (SAMHSA) State Opioid Response (SOR) grant to undertake a series of analyses to document the broader effects of MAT and what circumstances were preventing enrollment. These inquiries related to priority questions raised by the Opioid Overdose Prevention Task Force and Governor's Office.

Like many states in the U.S., Rhode Island was seeing high rates of opioid use disorder (OUD) among residents and wanted to increase access to and use of proven treatments—specifically, MAT. At the time, fewer than 25% of people were enrolling in MAT within six

months of their first OUD diagnosis or overdose—lower than the national rate, and well below neighboring Vermont (65%). The state wanted to know why and what could be done.

Despite being a proven effective treatment for OUD, MAT wasn't often offered by doctors licensed to provide the treatment, and among people who did enroll, many dropped out early. Policymakers were interested in generating local evidence regarding the impact of MAT (including outcomes outside of health, like earnings and child welfare) and identifying ways to encourage enrollment and engagement with MAT among people with OUD.

Rhode Island used its All Payer Claims Database (APCD), which includes data from all major health care payers in the state, to study rates of adverse events before and after the start of treatment. The study population included all people who received MAT. The state then looked at claims two years prior and two years after the first visit to calculate emergency room visits per 1,000 people, inpatient stays per 1,000, and total costs per member per month before and after treatment initiation.

Data sources

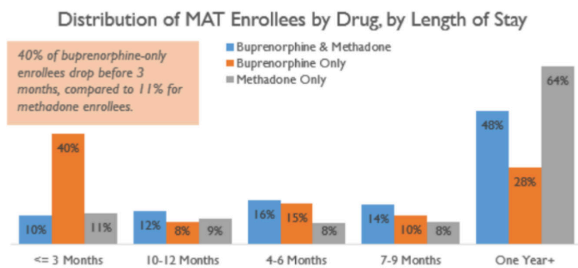
All Payer Claims Database (APCD)

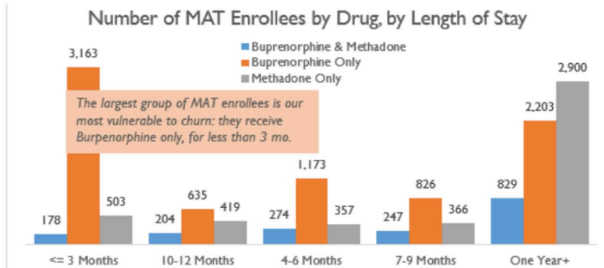
Findings

The analysis yielded actionable findings, including:

- MAT initiation was correlated with an immediate drop in ER (all visits, and Behavioral Health-related only) and inpatient (just Behavioral Health-related) stays. The effect was most pronounced among those that stay on buprenorphine or methadone for the recommended length of treatment.
- Participation in MAT contributes to a recovery and increase in wages.
- Receiving MAT was correlated with lower risk of child maltreatment for parents with OUD (see the study on child maltreatment above).

Treatment Length Matters





Impact

Overall, these findings showed that MAT works, and it works best when participants remain in treatment for the recommended length of time. Naturally, the team then wanted to know, what drives enrollment and supports sustained participation?

Stage 3: Patterns in MAT Enrollment

Rationale

Next, to understand factors associated with enrollment in MAT, the Rhode Island team used integrated data to study what differentiated people who enrolled in treatment within six months of their first OUD diagnosis or overdose from those who did not. Their goal was to use this information to offer recommendations for how the state might improve service approaches and tailor outreach for people less likely to enroll in treatment. They linked treatment (buprenorphine and methadone) enrollment data from Medicaid claims to data on fatalities, wages, child welfare, corrections, human services, and other outcomes.

Data Sources

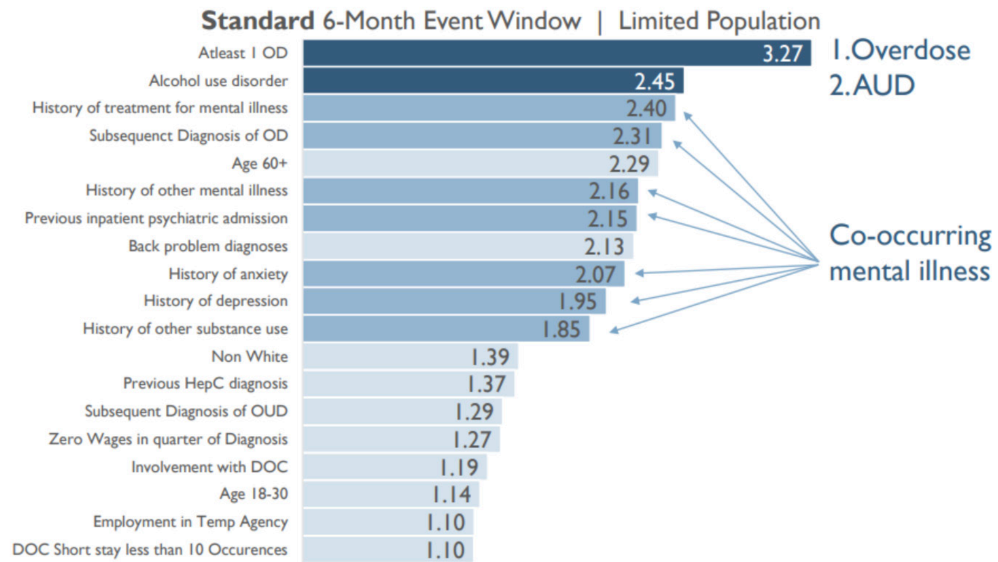
- Medicaid
- Department of Labor and Training (wages)
- Department of Corrections (records of stays for Medicaid enrollees)
- Department of Human Services (SNAP, TANF, CCAP)
- All-Payer Claims Database (reference for enrollment rates in other populations)

Findings

Highlights from the study, which were published in the Journal of Drug and Alcohol Dependence, showed:

- The majority (58%) did not enroll in MAT within six months of their diagnosis or overdose.
- Prior overdose, alcohol use disorder, and back problems predicted non-enrollment.
- A high number of ER and Primary Care Physicians (PCP) visits (above the 75th percentile) were associated with timely enrollment.
- Healthcare settings were identified as supportive pathways to treatment.

Relative Risk Factors



Importantly, results provided an assessment of both risk and protective factors. Identifying what works and where pockets of strong enrollment exist offered a way to build on strengths, as well as areas ripe for improvement.

"Complex" people are not enrolling in treatment— but regular care (even from the ER) helps

RISK FACTORS:

1. Overdose (especially > 1)
2. Alcohol Use Disorder
3. Co-Occurring Mental Illness
4. Age 60+
5. Back pain
6. Non-White
7. Tempoary Work

PROTECTIVE FACTORS:

1. High # of PCP Visits
2. High # of ER Visits (all causes)
3. Age 30–39
4. Tempoary Assistance for Needy Familes

Impact

Results were used to develop program and policy opportunities for improved response across providers, points of service, and community mental health organizations which were shared with the Governor's Overdose Task Force in a detailed presentation. Findings were also shared to drive conversation with clinicians, federal partners, the legislature, program

leads, advocates, and the drug users union. The state was subsequently awarded $24m in State Opioid Response (SOR) grants from SAMHSA and directed a portion of those dollars to provider education on MAT benefits, enrollment, and anti-bias communication.

Stage 4: Overlapping Crisis—COVID-19 and Overdose & Intervention Opportunities

Rationale

Rhode Island saw a steady decline in overdose deaths until the COVID-19 pandemic reached the U.S. in March 2020. While the impact of COVID-19 on drug use and overdoses is not fully understood, it has been nonetheless profound. Social isolation, job loss, economic uncertainty, and other pandemic impacts are all cited as drivers of the increase in substance use and fatality, creating compounding public health crises.

In 2020, Rhode Island, along with many other states, passed a grim milestone amidst the pandemic: it recorded the highest number of overdose deaths in a year, 25% higher than the previous record in 2016. While national news coverage implicated the rising and highly lethal fentanyl contamination in the drug supply, combined with the isolation of the pandemic, Rhode Island wanted to know specifically what was happening in their state so that they could quickly design targeted, local interventions.

One of the most impactful and innovative ways Rhode Island used COVID-19 stimulus and recovery funds was to assess COVID-19's role in a rapidly worsening overdose crisis and to identify specific ways that the state could intervene to save lives.

The state Ecosystem team led a mixed methods study that involved a quantitative analysis based on integrated data and a qualitative analysis based on 100+ key informant interviews. This allowed Ecosystem analysts to interpret data in context and incorporate insights from the lived experiences of people impacted firsthand by the overdose and addiction crisis.

Data Sources

- Medicaid
- Department of Labor and Transportation
- Vital Records (births, deaths)
- Office of the State Medical Examiner
- Corrections (via Medicaid)
- Department of Children, Youth & Families

Findings

Findings yielded three key insights that could be used to inform state response:

Rhode Islanders who lost their lives to overdose in 2020 were more likely to:

- Die of a fentanyl overdose,
- Be in a state of "fragile recovery" (e.g., recently in treatment, recent loss of income, and/or longer time since last overdose) and
- Suffer from the effects of COVID-19 isolation which was, in many cases, compounded by rising levels of institutional mistrust among communities of color in the wake of George Floyd's murder.

The findings validated national trends and also framed why social isolation was so insidious: many folks were in a fragile state of recovery, during which major disruptions or stress can influence relapse; many lost their recovery community, began to use alone, did not call for paramedic support because of fear of COVID-19, and feared calling first responders because law enforcement is required to respond to any overdose call. Undergirding their "recovery capital" with social and financial supports would be instrumental to prevention.

Results also brought to light the power of harm reduction to protect people who use drugs and are likely to come across fentanyl – *whether they are opioid users or not.* Further, the interviews and focus groups affirmed how historical inequities and ongoing structural racism drive disparate outcomes among racial groups: racism deprives communities of color of important capital, erodes trust in institutions, and creates barriers to equitable services, all of which exacerbate vulnerability and fragility during recovery. Specifically, the findings drew out the role systemic racism was playing in treatment experiences and in willingness to call first responders (which also alerts law enforcement).

Impact

In 2020, evidence-based priority recommendations were again brought to the state Overdose Prevention and Intervention Task Force: recovery resilience, harm reduction, race-explicit inclusive interventions, and tighter governance. Together, these ideas formulated a core approach dedicated to curbing the crisis:

Core Recommendation from Evidence Update

Accelerate a
tightly-coordinated, more inclusive strategy
centered on
harm reduction and recovery resiliency
for people at high risk of fatal overdose right now
to save lives.

Then, in July 2021, Rhode Island became the first state in the nation to approve legal safe consumption sites. The Ecosystem's findings were important in informing this historic move towards harm reduction. Moreover, their data capacity will be an essential tool in measuring the impacts of implementation and shaping the state's response to the evolving addiction and overdose crisis.

> **"People want to do the right thing. But the right thing isn't always obvious, popular, or 'practical'. Evidence illuminates and directs: in a sea of confusion, it is the wind, the rudder, and radar for this human instinct to help."**
>
> —Kim Paull, Director of Analytics, Rhode Island EOHHS

SPOTLIGHT: Rhode Island's Cross-agency Analysis on the Overdose and Addiction Crisis was created by Actionable Intelligence for Social Policy (AISP) at the University of Pennsylvania. It was developed through domain expert interviews, document review, and from many years working with and learning alongside the Rhode Island EOHHS Ecosystem and other AISP Network sites. It was made possible by grant funding from the Bill & Melinda Gates Foundation and the Annie E. Casey Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the funders.

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For guidance on how to responsibly build and scale IDS, view our *Quality Framework for Integrated Data Systems*.

Suggested Citation

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