Benefit-Cost Analysis of Proposed Amendments to
Opioid Overdose Prevention and Reporting Regulation (216-RICR-20-20-5)

Introduction

The Rhode Island Department of Health (RIDOH) proposes amendments to the regulation "Opioid Overdose Prevention and Reporting" (216-RICR-20-20-5) to allow RIDOH to better respond to the opioid epidemic. Many of the proposed amendments in the regulation are related to clarification and reorganization to make the regulation easier to read and understand, and do not amount to substantive policy changes. For example, though some terminology changes with respect to opioid antagonists (e.g., Naloxone/Narcan) and some substantial reorganization of this material, there is no substantive policy change with respect to who can dispense, acquire, possess, or administer opioid antagonists. Of note, while the proposed regulation specifies that the blood samples will be sent to RIDOH to be used for overdose prevention and surveillance, blood samples are currently sent to RIDOH for this purpose under the auspices of a different regulation (216-RICR-30-05-1). As such, this modification does not change current practice and will not be discussed in this cost benefit analysis.

The most substantive policy changes that would occur are related to proposals to modify Emergency Department's (ED) requirements when reporting nonfatal opioid overdoses to RIDOH. Specifically, the proposed amendments would require hospitals to report identifiable information (three variables: patient's first name, last name, and date of birth) to RIDOH for every opioid overdose, in addition to reporting basic demographic and treatment variables (which hospitals are already required to do). Under the current policy, identifiable data (name and date of birth) are only transmitted to RIDOH from hospitals in the event of a fatal overdose. The proposed regulation contains safeguards to protect patient data from disclosure to law enforcement or unauthorized recipients. The purpose of the proposed amendment is to improve RIDOH's ability to accurately identify overdoses trends, which will allow the department to better respond to the overdose epidemic in Rhode Island and evaluate new and existing public health interventions. The specifics of the proposed requirements, as well as their cost and benefits are discussed in greater detail below.

Problem Statement

Lacking identifiable information from EDs limits RIDOH's ability to respond to the overdose epidemic in RI. Without identifiable data for ED admissions, RIDOH cannot identify: 1) if admissions are all from the same individual or from unique people; 2) the total burden of non-fatal overdoses in RI; and 3) if individuals are initiating treatment after an overdose and being appropriately connected to care. If this regulation passes, these data would be provided to RIDOH alongside currently reported data after minimal (<$2,000) upfront costs per hospital and would significantly increase the department's ability to respond to the overdose epidemic.

Proposed Regulation: Reporting Requirements

After a period of decline from 2016 to 2019, fatal overdoses in Rhode Island increased by 25% in 2020 and increased further in 2021. Although 2021 counts are not yet final, as of March 2022 at least 421 individuals lost their lives to an accidental drug overdose death in Rhode Island. This marks the first time in Rhode Island history that over 400 individuals have died of an accidental drug overdose death and represents at least a 9% increase in 2021 compared to 2020.

In overdose prevention, data drives action. RIDOH uses data to guide over a dozen community partners to provide harm reduction supplies, alert the public to increases in overdose counts, and direct funding to regions that are most impacted by the overdose epidemic. The proposed regulation would allow RIDOH to collect identifiable information from opioid related overdose ED visits, aligning with what is currently reported to RIDOH from Emergency Medical Services (EMS), the Prescription Drug Monitoring Program, the Office of the State Medical Examiners, and Vital Records.

To address the increase in overdose deaths, RIDOH leverages data from multiple surveillance systems, including data from EDs. Currently, RIDOH receives deidentified ED data for opioid overdoses that is manually entered into a survey form and reported to RIDOH within 48-hours of admission (called the 48-Hour Opioid Overdose Reporting System). While this system has been in place since 2016, the 48-Hour System is burdensome to hospitals as it draws substantial human resources away from other pressing issues and is prone to human error. As the status quo, the 48-Hour System will likely remain if the proposed regulation is rejected. RIDOH has worked to set up a new system, developed by the Centers for Disease Control and Prevention (CDC), called the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE). Under the Overdose Data to Action grant, RIDOH is grant funded to report ED visit data via ESSENCE to CDC. ESSENCE is a nationally used, deidentified system that draws information from hospital's electronic health record automatically and in near real time, saving staff time and eliminated reporting delays. However, to fully transition to ESSENCE and allow RIDOH to utilize the system for weekly surveillance and response to regional outbreaks in opioid overdoses, RIDOH will need identifiable information to validate the new system and connect it to other sources.

The ED overdose reporting, as it stands currently, has important limitations. Without identifiable data for ED admissions, RIDOH cannot identify: 1) if admissions are all from the same individual or from unique people; 2) the total burden of non-fatal overdoses in RI; and 3) if individuals are initiating treatment after an overdose and being appropriately connected to care. The proposed regulation will eliminate these limitations.

Data made available by the proposed regulation will be shared in accordance with RIDOH's usual procedures (typically made through RIDOH's Substance Use Epidemiology Program's Overdose Surveillance hub page). Prior to sharing data, all data requests from individuals or organizations outside of the Substance Use Epidemiology Program (SUEP) must be approved by SUEP leadership, approved by the RIDOHs institutional review board (IRB), and a data use agreement developed by RIDOH lawyers must be signed by the receiving person/organization. Data transfers are then sent through secure data transfers, per agency protocol. However, as is stipulated in the proposed regulation, data requests for the purposes of law enforcement or law enforcement surveillance will not be allowed.

When collecting the data from hospitals, personally identifiable information (PII), collected through the proposed regulation, will be transferred from ED's to RIDOH via the secure Rapid Outbreak Detection System (RODS). Once the transfer of data is complete, data will be stored in an internal

secured share drive, identical to the ones used at RIDOH for other datasets that contain PII that are stored at the department.

Costs

The proposed regulation is expected to incur minimal costs when compared to the status quo. Costs considered include administrative burden, aversion to seeking care, and the risk of data breaches.

Administrative costs

Administrative costs for the proposal to receive identifiable information are expected to be $20,000 dollars statewide. The cost per hospital is estimated to be approximately $2,000. This cost is related to IT department staff time. EDs currently submit data to RIDOH through established data transfer systems, adding variables (such as identifiers) is a regular occurrence. Once the changes are implemented, data transfers will happen automatically, requiring only occasional maintenance. Given that the proposed regulation will allow RIDOH to transfer to an automated reporting system, the cost savings from personnel not having to review daily case files will quickly offset the $2000 estimated implementation cost.

"Chilling effect"

Collecting identifiable information raises concerns that there will be a "chilling effect", where individuals avoid medical care for fear of being identified. However, the primary method of transportation to EDs is through EMS, and RIDOH currently collects identifiable information from EMS runs. Therefore, we anticipate that few individuals would be impacted by this change and most individuals would have already had their identifiers sent to RIDOH from their EMS run. Other states which collect identifiable ED data from those who have experienced an overdose (Davis et al) have not noted a significant decline in ED utilization. As such, we anticipate a negligible "chilling effect" on individuals refusing to use ED services for post opioid overdose care due to concerns on sharing identifiable information.

Data Breach

As with collecting all sensitive data the proposed regulation will increase the potential for a data breach. However, RIDOH currently collects identifiable data from multiple sources and has not experienced a breach of opioid related data. Data is transferred and stored with secure methods, and protocols are in place if a breach occurs.

Benefits

Improving data collection is an important step in understanding and impacting the overdose epidemic in Rhode Island. The proposed regulation will allow RIDOH to: 1) identify if ED admissions are all from the same individual or from unique people; 2) identify the total burden of non-fatal overdoses in RI; 3) determine if individuals are initiating treatment after an overdose and being appropriately connected to

care; 4) allow RIDOH to transition to an automatic syndromic surveillance system (rather than manual) saving hospital staff time; and 5) maximize the use of previously established databases.

Identifying unique ED admissions

Having the capacity to identify the number of unique individuals experiencing an overdose will allow RIDOH to significantly improve its response to the overdose epidemic and more accurately focus the scope and type of interventions RIDOH and their partners implement. For example, currently if there were 40 overdoses in community A and 30 overdoses in community B, RIDOH would focus most of its efforts on Community A. However, it could be that community A's 40 overdoses were due to 4 individuals who had repeated overdoses, when in community B the overdoses were due to 30 unique people. In this circumstance the health department and its community partners are incorrectly assigning more resources to community A, when in fact the burden in community B based on people was more than 7x higher. RIDOH's community partners depend on knowing the scale information to appropriately distribute harm reduction materials like naloxone. Collecting identifiable information will enable RIDOH to more accurately direct resources to where they are most impactful.

Identify the total burden of non-fatal overdoses

Currently, RIDOH cannot identify the total number of nonfatal overdoses in the state, as it's impossible to know if EMS and ED recorded overdoses are all unique – or all reflective of the same population. For example, if Providence has 100 EMS runs for opioid overdoses in February and 100 ED admissions, RIDOH currently doesn't know if this is reflective of 200 overdoses (people who EMS sees are unique from those that go to the hospital) or if there are only 100 people who had an overdose. This makes prioritizing which towns receive resources difficult as the true burden is unknown.

Determining appropriate linkage to care

In 2017, Rhode Island passed the Levels of Care Regulations defining a minimum standard of care that must be met when hospitals are providing post overdose care in the ED. Some of the initiatives outlined in this regulation work to increase hospital's ability to link individuals to care post overdose. With the provision of identifiers from ED data, RIDOH could link ED data to other data sets to identify who has been connected to care post overdose. This would allow RIDOH to identify the number of individuals who: a) filled a naloxone prescription; b) started on buprenorphine treatment; c) started on methadone treatment; d) utilized non-medication opioid use disorder treatment; and e) the length of time individuals where engaged in all of these programs.

Equity

ED data is the primary source of demographic data, including race/ethnicity data, for non-fatal overdoses. Being able to de-duplicate data through receipt of identifiable information, RIDOH could better leverage these data to establish which populations in Rhode Island are inequitably impacted, are not being linked to care appropriately, or are not utilizing EMS services. Tailoring interventions to inequitably impacted groups will help those most harmed by the overdose epidemic.

Cost Efficacy

Overall, we anticipate that the cost to implement this system statewide will be roughly a one-time cost of $20,000 ($2,000 for each of the 10 hospitals in RI), however, this cost will be quickly recouped after this regulation goes into effect. First and most directly, this new system would allow RIDOH to transition from using the 48-hour reporting system, which legally requires hospital staff to manually review all ED admissions each day and report any suspected opioid overdoses cases to the health department, to ESSENCE, which places no burden on hospital staff to manually report. We anticipate that overtime the cost savings in labor averted will pay for this system. Specifically, while some hospitals report spending 3-5 hours per week reviewing and reporting cases, if hospitals only spent 1 hours per week manually reviewing cases and reporting to the 48-hour reporting system, (assuming an average nurse salary of $87,565 dollars per year -$41.03 an hour), we anticipate that the hospital could recoup the $2,000 one-time cost at the hospital level within a year.

Additionally, the average costs of and opioid overdose related EMS run, ED visit, and inpatient hospitalization are provided in the table below. If the improved data from this system could allow RIDOH and its community partners to prevent 6 EMS + ED admissions at any time in the future this system would also be paid for (of note: 1,569 ED admissions occurred in 2021). Additional savings could also be obtained by using this data to prevent EMS runs for opioid overdoses (estimated cost per run: $466), and by preventing inpatient hospitalizations for opioid overdose (estimated cost per admission: $7,897).

Table 1. Input parameter values and sources

Parameter	Primary estimate
Cost	
Ambulance run cost	$466* (US Centers for Medicare and Medicaid Services)
ED visit cost	$3,451 (Armbrecht et al.)
Inpatient hospitalization cost	$7,897* (Mallow et al.)
Ambulance run cost + ED visit cost	$3,917 (US Centers for Medicare and Medicaid Services; Armbrecht et al.)
Ambulance run cost + ED visit cost + Inpatient hospitalization cost	$11,818 (US Centers for Medicare and Medicaid Services; Armbrecht et al.; Mallow et al.)

* Estimate for Providence.

Conclusion

In conclusion, the proposed regulation provides RIDOH with important tools to combat the overdose epidemic with minimal costs that can be quickly recovered by hospitals. If passed, this regulation will allow RIDOH to better identify the overdose burden in RI allowing RIDOH to significantly improve its response to the overdose epidemic and more accurately focus the scope and type of interventions RIDOH and their partners implement. Additionally, this regulation will allow RIDOH to evaluate current regulations by identifying if individuals are being appropriately linked to care after a non-fatal overdose and determine if racial or ethnic disparities in treatment access exist. Finally, this system will reduce the burden on hospitals by allowing RIDOH to transition to a fully automated surveillance system allowing hospital staff to better care for their patients.

References

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