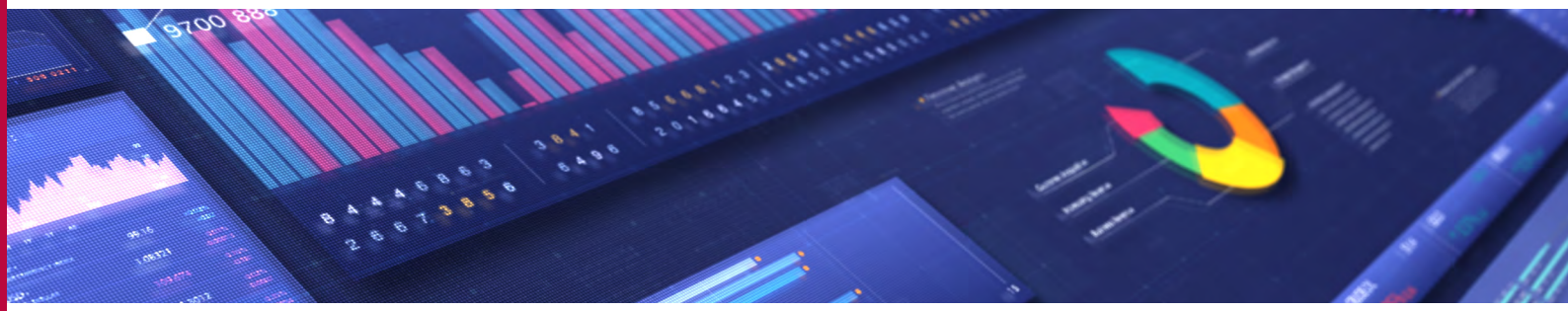
HARVARD Kennedy School
Government Performance Lab



Innovations in 911 Response

Leveraging Data to Strengthen Alternative Response Programs

Authors: Gabriela Solis Torres, Libby Doyle, Analisa Sorrells

In 2022, the Durham Community Safety Department (DCSD) launched a pilot of four crisis response programs to connect community members experiencing mental health crises or quality of life concerns with appropriate resources.

As alternative emergency response programs are increasingly embraced by cities across the country, many will have to build new systems that collect data on their program's operations and outcomes.

The Harvard Kennedy School Government Performance Lab (GPL) has worked with Durham, North Carolina, for the last four years to support the launch and development of their alternative response program. Durham has established itself as a leader in the field by using data to evaluate program performance and improve outcomes for residents.[1]

We asked Durham leaders to explain how they rely on data to answer the following core implementation questions:

1. Measuring What Matters: How do you measure if your alternative response program is functioning well, whether it is ready to expand, and if it is having an impact on the people it serves and the traditional emergency response system?
2. Data Infrastructure: How did you build your data infrastructure to measure and use data regularly to improve program operations?
3. Data-Driven Improvements: How do you determine what is working in your alternative response program and sustain and improve upon your successes? How do you determine what is not working and implement solutions to address challenges?

This publication is the second in the GPL's ***Innovations in 911 Response*** series, which spotlights Durham's approach to creating and operating an alternative response program.

Click here to read the other publications about starting a program, staffing decisions, and 911 integration.

1. DCSD requested that the GPL document their implementation learnings and share those insights with other jurisdictions interested in starting or expanding their own alternative response programs.

"We value collecting data because it translates our shared goals and vision into something operational and something that we can track over time to see if we are successfully serving neighbors. But data dashboards alone are not enough. We try to pair program data with stories, which provide real depth to our work and help people understand the on-the-ground impact of departments like ours."

— Ryan Smith, DCSD Director

DCSD Director Ryan Smith talks with a staff member about program data.

Background on the HEART Program

The Community Safety Department's 911 crisis response programs form the Holistic Empathetic Assistance Response Teams (HEART), while direct access to services and longer-term care are part of their Stabilization Services Division. HEART is staffed by social workers, emergency medical technicians (EMTs), and peer support specialists who are dispatched to calls through the city's 911 call center. To learn more about DCSD's four crisis response programs, please read the GPL's publication about the development of HEART here.

A key component of the HEART program's successful implementation in Durham is DCSD's early consideration of how data would be collected and used to improve program operations. This piece explores key data collection decisions that alternative emergency response programs may face — such as selecting essential metrics, using data for continuous improvement, and data infrastructure — and highlights Durham's approach to data management as an example of how one city leverages data to improve outcomes for residents, whom the HEART program also calls neighbors.

1. Measuring What Matters: How Did DCSD Select Essential Metrics for HEART Operations?

Challenge: Metrics can help alternative response program leaders answer core questions about their program operations and the people they serve. However, many program leaders face challenges determining which factors are most essential to measure.

DCSD's Approach: DCSD leadership prioritized collecting a core set of metrics across three categories: program operations, areas for expansion, and program impact. Each metric the department collects is linked to an overarching question, ensuring that every data point serves a clear purpose.

Measuring Program Operations

To assess whether their programs were functioning as intended, DCSD leaders first identified core operational questions and then selected the metrics needed to answer them. Examples of these guiding questions and related metrics are included below.

Are calls being successfully triaged and dispatched to the appropriate responders?

Metrics:

- **Call volume:** Number of calls answered, separated by HEART program.[2]
- **Eligible call volume:** Number of calls HEART was eligible to respond to, including calls they were not able to respond to due to capacity.
- **Call origin:** Number of calls responded to by HEART by call origin, including 911 or self-initiated.
- **Response time:** Average number of minutes from dispatch to HEART arrival on scene, separated by team type.

Why this matters: Together, these metrics help DCSD's leadership understand if their triage and dispatch processes are effectively and efficiently connecting HEART responders to eligible calls.

Are responders safely responding to and resolving calls?

Metrics:

- **Call outcome:** Percentage of calls in different outcome categories, including resolved on scene, unable to contact, transport, referred to police, etc.
- **Responder safety:** Percentage of calls where HEART responders report feeling safe.
- **Calls for backup:** Percentage of calls that require police backup for HEART team safety and the percentage of calls that require EMS support.

Why this matters: These metrics help HEART understand whether team members feel safe doing their jobs and are able to successfully resolve calls on scene without the need for police or EMS backup, which indicates that teams are functioning as designed.

2. This metric should reflect 911 incidents, not total number of calls, given that a single incident may be associated with multiple related calls.

Identifying Areas for Expansion

From the beginning of the pilot, DCSD leaders wanted to be able to identify areas where HEART could expand to further serve Durham residents. This data was particularly helpful as DCSD's programs planned to expand from the initial pilot in a subsection of the city to a citywide operation. To identify areas for potential growth, DCSD leaders selected metrics that answered the question:

Where are there opportunities to respond to additional eligible calls?

Metrics:

- **Forgone opportunities:** Percentage of HEART-eligible calls that HEART does not respond to due to limited hours or units not being available.
- **Call volume over time:** Number of HEART-eligible calls per day of the week and hour of the day, including those HEART responds to and those HEART does not respond to.
- **Call geography:** Number of HEART-eligible calls per service area ("beats"), including those HEART responds to and those HEART does not respond to.
- **Average response time:** Average response time for eligible calls that HEART does respond to.

Why this matters: These metrics help HEART measure how many eligible calls their teams are not responding to — including when and where those calls occurred — due to not enough units being available or a call occurring outside of operating hours. Further, by measuring average response time for eligible calls HEART cannot respond to, leaders can more accurately estimate the additional staffing required to meet an increase in their call capacity. With these metrics, HEART leaders can project specific staffing needs for different expansion scenarios.

Evaluating Program Impact

Because many alternative emergency response programs are in the early years of implementation, it's important to measure their impact on the communities they serve. DCSD leaders prioritized collecting data points that would help them answer the following questions related to impact:

Are the people served by alternative response teams successfully connecting to services?

Metrics:

- **Service referrals:** Percentage of calls involving referrals to care, designated by type, including behavioral or mental health care, housing crisis supports, domestic abuse supports, etc.
- **Transports:** Percentage of calls resulting in transport, designated by destination, including behavioral health care facilities, housing, the location of family/friends, or a food source.
- **Follow-ups:** Number of calls that receive a follow-up from HEART's Care Navigation team, which provides additional support for connecting residents with care.

Why this matters: These metrics allow HEART to understand if residents are connected to services that can help address the underlying reasons for their crisis, such as accessing medical care or stable housing. Most public safety agencies do not provide service referrals nor do they follow up with callers. This can make it especially difficult to determine which benchmarks an alternative response program should use for these metrics. However, establishing and measuring clear outcome metrics, when possible, can help guide program improvements.

"The more cities that collect this documentation, the better sense we will get as to what a national benchmark for service referrals and follow-ups should be."

— Anise Vance, DCSD Assistant Director

How is the traditional emergency response system impacted by alternative response teams?

Metrics:

- **Police time savings:** Number of estimated hours of police time saved due to HEART responses. DCSD uses the following calculation:

Number of eligible calls HEART responds to	**X**	Average police units sent per 911 call	**X**	Average police response time per unit *(dispatch to clear)*	**=**	Estimated police time saved due to HEART responses

- **Comparative use of arrest:** Number of arrests on calls HEART responds to compared to the number of arrests on HEART-eligible calls that HEART does not respond to.
- **Comparative transports to hospitals and non-hospital recovery centers:** Number of transports to care centers on calls HEART responds to compared to the number of transports on HEART-eligible calls that HEART does not respond to.

Why this matters: These metrics allow HEART to understand if its operations are positively impacting the traditional emergency response system by saving police time, reducing arrests, and reducing hospitalizations. When HEART saves police time, officers can focus on those 911 calls with a higher likelihood of criminal activity. When HEART reduces arrests and hospitalizations, the city spends fewer resources on incarceration and medical transports to care, and residents are instead directly connected to the services they need.

2. Data Infrastructure: How did DCSD Build Its Data Capacity?

Challenge: Given the unique position of alternative response programs within the emergency response landscape, data related to these programs is often stored in multiple locations, including 911 dispatch systems, alternative response team case management software, and law enforcement systems. Alternative emergency response program leaders frequently face challenges accessing and connecting key data points they need to understand their programs.

DCSD's Approach: DCSD has designed a data infrastructure that combines data from multiple sources — 911's computer-aided dispatch (CAD) system and the program's case management software — into a single server. That server then feeds into both internal and external dashboards that monitor the program's performance. DCSD's approach to linking data across different sources, along with its decision-making process for selecting a case management software, is described in more detail below.

Procuring Case Management Software

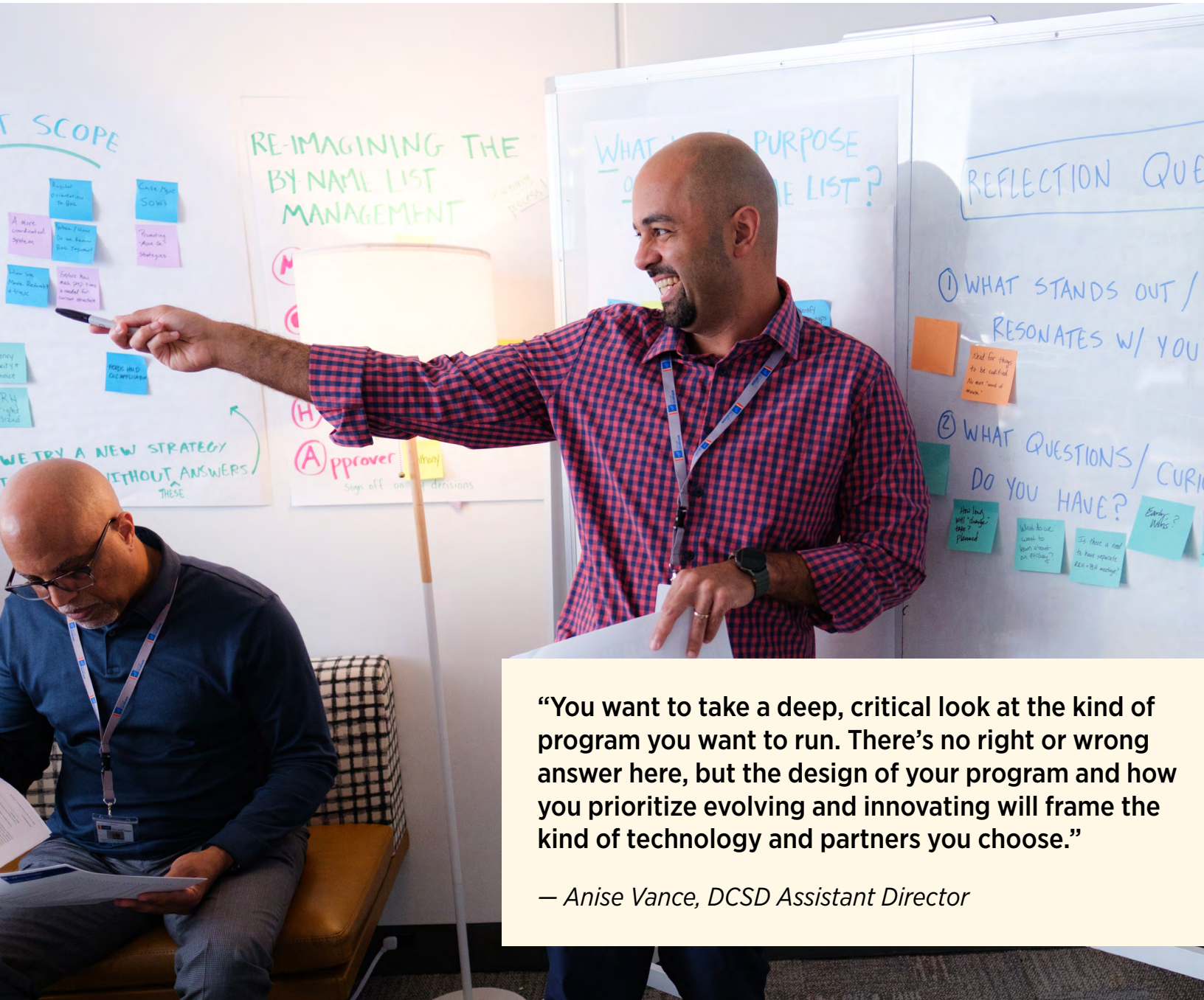
Some alternative response programs may wish to procure case management software to collect information on the calls they respond to and the needs of residents. While cities typically have their own procurement procedures, there are several overarching factors alternative response leaders should consider when weighing software options:

1. **Flexibility and adaptability of software:** Often, the data collection needs of a department will evolve as they expand services or refine their approach over time. A program that is just getting started may want to prioritize a flexible platform they can adapt as responders encounter different situations in the field.
2. **Ability to link 911 call data:** Alternative response programs need to have accurate and real-time data on eligible 911 calls to effectively support residents. Having case management software that populates automatically with 911 call data can reduce the administrative burden on response teams and lower the likelihood of inaccurate data entry. Recognizing this, DCSD prioritized selecting software that could integrate with other existing data sources, such as the city's Computer-Aided Dispatch (CAD) system.
3. **Ability to pull data:** Program leaders must also consider the level of access they want to the raw data. Some software systems do not provide direct access to data, instead requiring users to submit requests to pull data, which can result in delays. In Durham, leaders prioritized software that allowed them to access their case management data at any time via a warehouse. This has enabled DCSD to build comprehensive and dynamic dashboards that help them understand their program operations and share their activities with the Durham community.
4. **Data security:** Alternative emergency response is an emerging field with few clear-cut standards for the level of data security programs need to provide. However, because alternative response programs do often deal with sensitive personal data, programs should consider procuring a clinical-grade platform that provides clear protections for data.

Example from Durham: Investing in Information Technology (IT)

In Durham, city leaders have established an IT governance model that ensures technology investments across the organization align with strategic goals and deliver value for city departments. Through this process, the city's Technology Solutions Department reviewed applicants and selected several software programs for DCSD staff to review. DCSD staff ultimately selected the software company Julota. While there is no one-size-fits-all software for alternative response programs, Anise Vance, assistant director of DCSD, noted that being intentional in the technology selection process is an important step in setting up a program.

DCSD Assistant Director Anise Vance speaks with his team during a brainstorming session.



"You want to take a deep, critical look at the kind of program you want to run. There's no right or wrong answer here, but the design of your program and how you prioritize evolving and innovating will frame the kind of technology and partners you choose."

— Anise Vance, DCSD Assistant Director

Engaging Stakeholders

A key challenge alternative response programs may face in building their data infrastructure is getting other agencies on board with sharing their data. Leaders at DCSD cite the strong communication and willingness of agency leaders to work together to troubleshoot data sharing issues as key factors that helped them build such a robust, integrated data system.

During the design phase and early implementation of HEART, city leaders held a weekly multi-agency planning meeting with Alliance Health, the University of North Carolina School of Social Work, and first responder agencies including the Emergency Communications Department, EMS, the Durham Police Department, and the Fire Department.

"There are differing perspectives because we have different backgrounds and experiences, but we had to develop trust on either end. We had to recognize that everyone was trying to serve the best interests of the people who work, live, and play in Durham."

— Anise Vance, DCSD Assistant Director

In addition to relationship building with other public safety and service provider organizations, DCSD heavily relied on their department's lawyer, Sofia Hernandez, who provided legal support as they determined what data could and could not be shared under privacy laws. Because alternative response is an emerging field, DCSD leaders wanted to make sure they were able to both protect confidential resident information and also share data with other responders when necessary. Hernandez cited Pathways to Yes — a legal framework for sharing health data — as a resource they used in making their case for data sharing.

Example from Durham: Expanding Services

On July 1, 2025, DCSD expanded to begin offering direct access to resources and longer-term care through their new Stabilization Services Division. Tracking referrals and outcomes will likely require further coordination with stakeholders across Durham. According to DCSD leadership, Julota has the capability to provide tiered access to data for providers to make and access referrals, but they have yet to leverage this capability in their work. The expansion into stabilization services may benefit from this level of data infrastructure, which is another factor to consider when procuring a system.

Creating Dynamic Dashboards

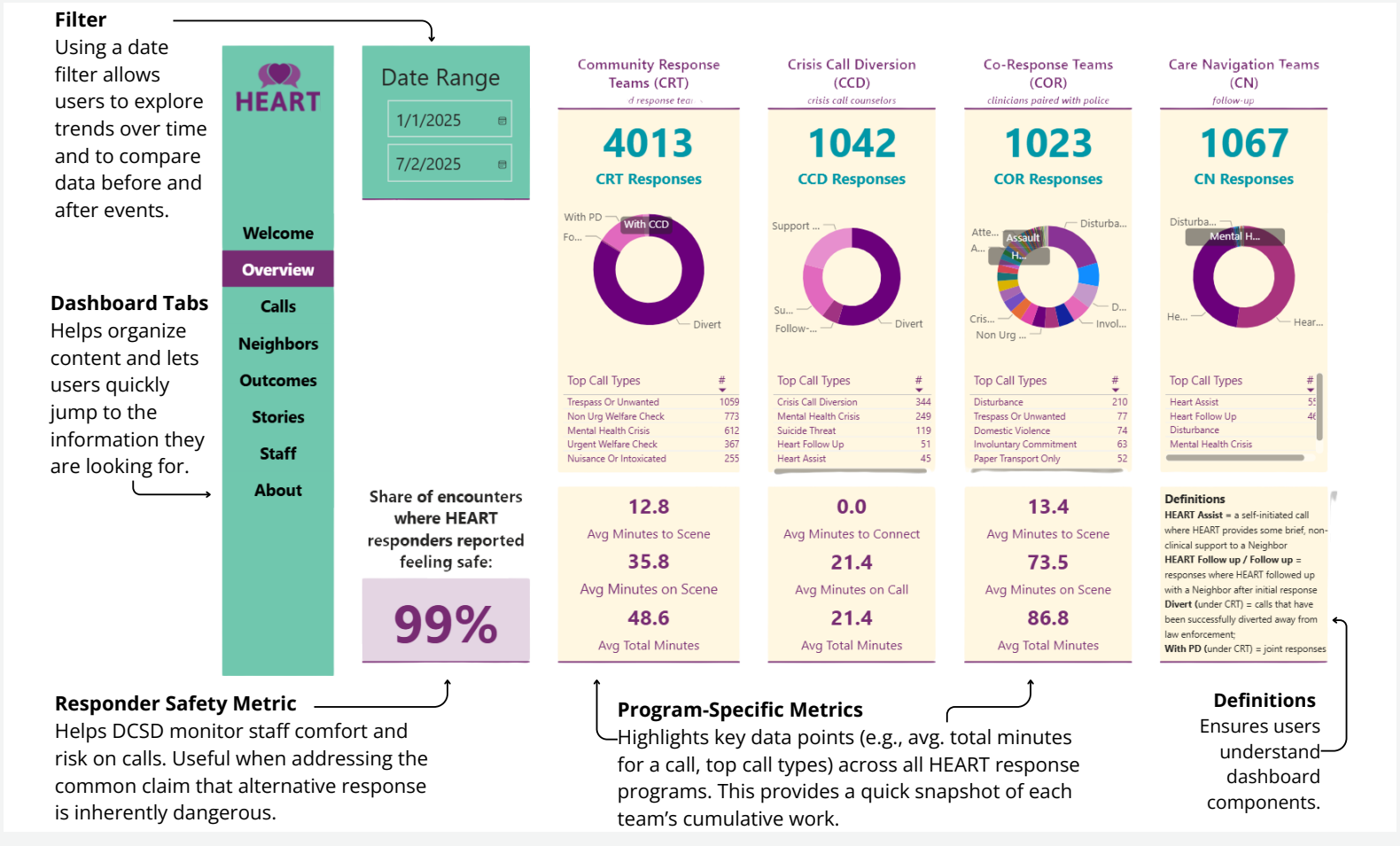
DCSD's data infrastructure enables them to pull data from their case management software and CAD to build a series of internal and public-facing dashboards. These dynamic dashboards help users understand the types of calls HEART responds to, the neighbors they serve, and the outcomes of these calls.

To learn more about DCSD's data infrastructure and how these data sources are pulled to create the department's dashboards, please see Appendix A. HEART's external dashboards can be found here.

"We knew we were doing work that would be under scrutiny, and it felt important to us that we were transparent about what we were doing and how it was going. Building public dashboards helped us foster credibility with the community. They were a signal that we were serious, we had done our homework, and we wanted people to see how this unfolded in real time."

— Ryan Smith, DCSD Director

A GPL-annotated version of a DCSD dashboard, which visualizes data to promote transparency to residents and city stakeholders.



Sticky notes from a brainstorming session at the DCSD office.

Example from Durham: Sharing Data Publicly

DCSD has developed a range of resources that allow them to share key data points publicly, increasing transparency around their operations. These resources include:

The DCSD Data Dashboard

Refreshed regularly, this custom data dashboard shares a combination of data from Durham's 911 computer-aided dispatch (CAD) system and DCSD's clinical management software (CMS), Julota. Tabs organize data into different categories, including information on call volume, average response time, percentage of calls that require requests for police or EMS backup, call outcomes, demographics of those served by HEART, demographics of staff, and qualitative summaries of HEART calls. The dashboard also has the ability to filter and segment data across variables such as time and program type.

This article shows how the GPL used dashboards to visualize child welfare agency data in Michigan.

The Major Questions Dashboard

DCSD created a set of dashboards to answer the major questions people often ask about HEART. Each question has its own dashboard page with a simple answer to the question, paired with data. This is a forthcoming tool the GPL will share after DCSD launches it.

HEART Data Cards

Available in English and Spanish, these cards began on a monthly cadence and are now published quarterly. Each data card includes an overview of program highlights, including both qualitative and quantitative metrics.

3. Data-Driven Improvements: How is DCSD Leveraging Data to Improve Program Outcomes?

Challenge: Using data is not just about making sure your program is measuring the right metrics — it is about using that data to improve program outcomes. Data-driven performance management, or the practice of using data to determine how well services are performing and to identify areas for improvement, can help alternative response programs ensure they are improving outcomes for residents. However, many program leaders may find it difficult to use data in this way, instead turning to data at isolated moments in time, such as the conclusion of a pilot or the launch of a program expansion.

DCSD's Approach: Leveraging the robust data it collects, DCSD runs a quarterly performance improvement process to establish learning priorities, uncover what is or is not working about its program, and design and implement solutions.

Investing in a Process Improvement Strategy

Crisis response program leaders often have competing priorities, making it difficult to set aside time to think about overall process improvements. However, creating the infrastructure for a system that examines a few key learning priorities at a time can help programs improve how they deliver services to residents. Each jurisdiction should design a process improvement strategy tailored to its unique needs, but there are common questions leaders should consider during implementation, including:

- How regularly will we use learning cycles to reflect and make improvements?
- What staff will be dedicated to leading and supporting this effort?
- How will we gather and use both data and responder input to guide our decisions?
- How will we test potential solutions before rolling them out more broadly?
- How will we measure the impact of the changes we make?

In Durham, leaders created a quarterly learning and iteration process that gives staff the opportunity to share innovative approaches, concerns, and hopes for the department in a way that improves their work, rather than distracting from it.

"The quarterly process recognizes that we can't do it all, so we need to choose where to allocate our resources. The goal is that at the start of each quarter, everyone should know what we want to learn about and why."

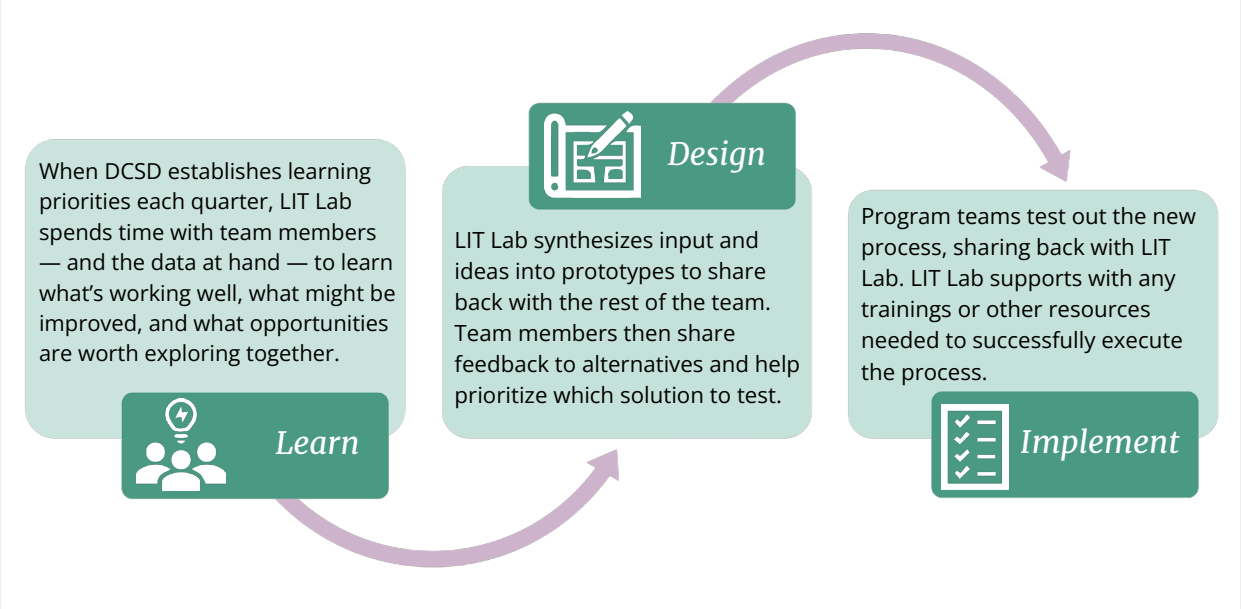
— Ryan Smith, DCSD Director

HEART's Learning & Iteration Lab (LIT Lab)

DCSD leadership made significant investments in administrative staff to create the Learning & Iteration Lab, which supports data collection and continuous improvement across the department.

- **Staffing:** Manager of Learning and Iteration, Program Impact Strategist (2 FTE), Program Impact Specialist, and Hiring and Training Specialist. *(Note: Staffing of the LIT Lab has grown with the department and reflects staffing levels as of summer 2025.)*
- **Responsibilities:** Data collection and review processes, research, implementation design, quality control, staff training, and strategic planning.

The Learning and Iteration Lab (LIT Lab) runs the quarterly learning process and helps identify departmental priorities each quarter through conversations with front-line staff, managers, and DCSD leadership. DCSD's three-step process is illustrated below:



This approach leverages the expertise of front-line staff, which helps build buy-in for solutions. In the past, DCSD has used the quarterly learning and iteration process to answer questions related to staff training, defining and creating equity in their department, and program operations, including a comprehensive review of the roles and responsibilities of the Care Navigation team. Below, we provide a step-by-step example from Durham's learning and iteration process.

Step 1: Identify a Learning Priority

The first step of a process improvement strategy is identifying and prioritizing a question. To begin this process, alternative response programs can ask the following questions of their staff:

- What parts of the response process often cause confusion or miscommunication?
- Where do we see breakdowns in coordination between teams or agencies?
- Are there policies or procedures that feel out of sync with how the work actually happens?
- Are there any issues impacting our well-being or morale?
- What feedback have we heard recently from community members that we have not acted on yet?
- What improvements or additional services would make the biggest difference for the people we serve?

Example from Durham: Identify a Learning Priority

In Durham, LIT Lab staff work with department leadership to identify learning objectives to focus on each quarter. In one quarter, DCSD wanted to explore expanding and refining the role of Crisis Call Diversion (CCD) clinicians. CCD clinicians are based out of the city's 911 call center and provide direct support over the phone to callers. DCSD wanted to learn about the current experiences of CCD clinicians, their capacity to take on additional calls, and to identify opportunities to further incorporate their expertise to support residents.

Sticky notes from a brainstorming session at the DCSD office.

Step 2: Uncover Insights

Once a learning priority has been set, it is important to gather information to understand what is working well, what might be improved, and what opportunities are worth exploring. Program leaders can ask the following questions to uncover insights:

- What data do I need to understand this issue?
- Are there any variations in how this issue is experienced across the department? (e.g., Does this issue happen during particular shifts?)
- What feedback can we gather from responders, partner organizations, or community members about this issue?
- What ideas or solutions have staff already suggested or tried?

Example from Durham: Uncover Insights

After selecting their objective, the LIT Lab performed sit-alongs with CCD clinicians and facilitated conversations with shift supervisors and clinical managers. They also reviewed quantitative call data and case narratives to understand the call types CCD is best suited for, pain points in the role, and areas for growth.

Through the learning phase, LIT Lab members identified the following three takeaways, which informed the design phase of the process:

- CCD clinicians provide essential support to neighbors who call 911 for behavioral and mental health concerns and feel best suited in calls where they can de-escalate over the phone, create safety plans for neighbors or family members, offer resource navigation, and follow up with neighbors after a mental health crisis.
- CCD responses have decreased since HEART expansion in October 2023, with follow-up calls to eligible neighbors who did not receive a HEART response decreasing the most during this time period.
- CCD clinicians often support familiar callers (i.e., people who call 911 repeatedly) with high acuity and/or complex needs.

Step 3: Design a Solution

After collecting information on a problem and identifying key takeaways, staff can develop potential solutions. When designing solutions, leaders can ask:

- How much staff effort, resources, or time would this solution require?
- What impact would this change have on the people we serve?
- Does this solution align with our program's core values and mission?
- What barriers might make this solution hard to implement, and how could we address them?
- Are there interim solutions we should consider?

Example from Durham: Design a Solution

Based on the insights they uncovered, LIT Lab staff designed possible solutions and shared them with team members who provided feedback. The team identified three approaches to test and implement throughout the quarter.

DCSD staff participate in a brainstorming session led by the LIT Lab.

Step 4: Implement a Solution

This final phase of a learning and iteration process involves implementing and measuring the impact of a solution. Leaders can ask themselves:

- How will we track whether the solution is having the intended impact?
- Who will be responsible for monitoring progress and adjusting if needed?
- How will we roll out this solution in a way that is clear and manageable for staff?

Example from Durham: Implement a Solution

LIT Lab staff identified three areas of focus as a result of the learning and design phases. They presented these findings at an all-staff meeting and discussed how these changes would be implemented using the department's change management strategy:

- **Expand the definition of HEART follow-ups.** DCSD will test an expanded definition of HEART follow-ups (e.g., following up on calls where HEART has responded compared to calls where HEART did not respond) and will monitor how this impacts call volume and responder capacity.
- **Provide more support for CCD clinicians responding to familiar callers.** DCSD will develop a unified approach and consistent conversation around how to best support familiar callers with compassionate care.
- **Develop additional protocols, training, and resources.** DCSD will increase resources to support CCD clinicians on topics including how to support familiar callers, how to manage verbally abusive callers, how to support domestic violence survivors, and how to connect callers with appropriate resources.

Anise Vance. DCSD assistant director, in a meeting with DCSD staff.

Communicating and Managing Change

When department leaders change their operations rapidly without clearly communicating these changes to staff, it can cause confusion and frustration. Developing a process to clearly communicate and roll out changes to staff members can help avoid these challenges. Alternative response programs should consider creating their own process to communicate large programmatic changes to staff that provide:

- Time to digest a change before it is implemented
- An opportunity to ask any questions or share concerns about a change
- Access to resources on the change

Example from Durham: How DCSD Manages Change

Alongside the quarterly Learning and Iteration Process, DCSD leaders also developed the following process through which changes are communicated and rolled out to staff members:

- Staff participate in small group conversations about a change, during which the point person on the change attends and shares relevant information, such as when it will take effect and how it may impact their role. This information is communicated both verbally and on a physical card.
    - Small groups typically include four to six people and occur two to four weeks before a change goes into effect.
- Staff receive an email reminder about the upcoming change and a notification via text the day before a change takes effect.
- In the days following the change, leaders have brief conversations with some of the people affected by the change to gauge the impacts.

To learn more, please see these additional resources:

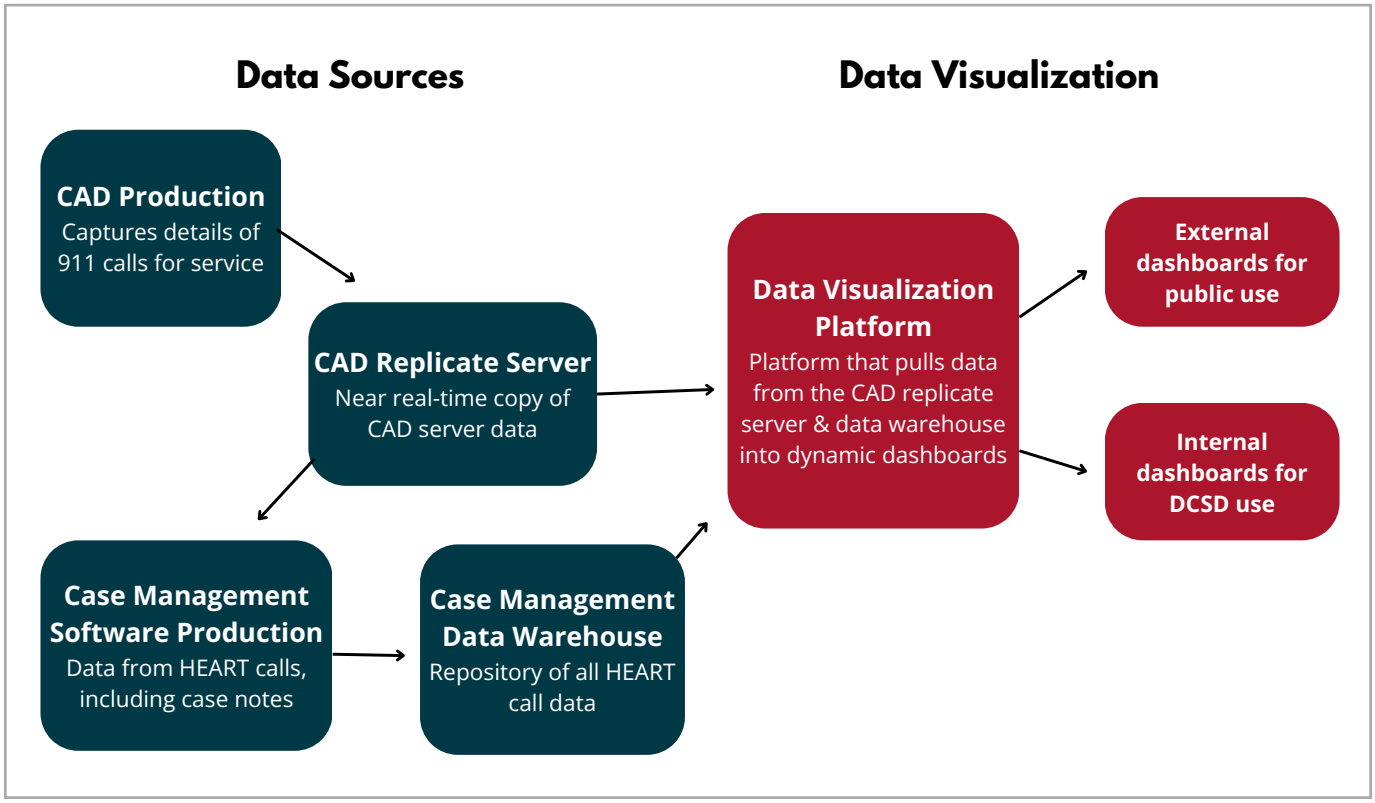
- Explore the other publications in the Innovations in 911 Response series.
- Join the GPL's Alternative Response Community of Practice to connect with other jurisdictions working to advance alternative response.
- Browse the GPL's other tools and research on alternative emergency response.

Appendix A

Two key components of Durham's data infrastructure that enable them to build dynamic dashboards:

1. **Ability to link to CAD:** Leaders at DCSD knew that they wanted to find a way to link their case management software directly with the city's 911 dispatch database. To do this, DCSD leveraged the city's replicate server of their CAD system, which updates within a minute of the CAD production server. Leaders at Durham's 911 call center felt comfortable with DCSD linking directly to this replicate server because it would not impact production or the processing of emergency calls.
2. **Ability to pull data from Julota:** Because of the linkage to the CAD replicate server, any time a HEART-eligible call comes through the 911 call center, it automatically populates in their case management software. HEART responders then manage and input data from calls, including case notes, directly into this software. DCSD wanted to be able to access their data at any time, which led to them selecting software with a data warehouse option. This warehouse links to Julota and allows the team to pull data directly into their data visualization software, Power BI.

The figure below illustrates how the various system components of DCSD's data infrastructure feed into HEART's public-facing and internal dashboards.



Members of the HEART team pose for a photo.

The Government Performance Lab, housed at the Taubman Center for State and Local Government at the Harvard Kennedy School, conducts research on how governments can improve the results they achieve for their citizens. An important part of this research model involves providing hands-on technical assistance to state and local governments. Through this involvement, we gain insights into the barriers that governments face and the solutions that can overcome these barriers. By engaging current students and recent graduates in this effort, we are also able to provide experiential learning.

Designed by Sara Israelsen-Hartley. Photos by Cornell Watson. Cover photo by Adobe Stock.