

On February 7, 2024, the NYC Pandemic Response Institute invited a group of multisectoral stakeholders to the first of a series of Data Expos, to reflect on past data sharing practices and guide future partnerships before, during, and after public health emergencies. This session included a moderated panel discussion and a small group exercise where participants discussed illustrative disaster/emergency scenarios and were asked to consider the partnerships, data sources, data sharing infrastructure, and collaborations necessary to understand and respond to the emergency during initial response, expansion, and recovery phases. By convening this group in person, the first Data Expo also bolstered professional networks that can be activated in response to a crisis.

This document provides a brief summary of the discussions at this event regarding the complexities of data sharing practices prior to, during, and after emergencies and how to improve the efficiency and effectiveness of data sharing and cross-sector collaboration. The findings from the discussions will be used to inform the agendas for the next, larger Data Expos which will include broader civil society and healthcare partners and, thereafter, to inform PRI's plans in these areas.

Based on the event's discussions, this document covers:

- Challenges
- Recommendations
- Suggested Partnerships and Collaborations
- Next Steps

## Challenges

Reflecting on past experiences with data sharing during emergencies, participants identified four key challenges:

- **Burdens of data sharing:** issues related to timeliness, adaptability, and the absence of a well-established legal framework to support efficient, effective, and compliant data sharing practices
- **Data literacy and communication:** gaps in understanding and skills related to data among various stakeholders, limiting meaningful and informed data analysis and communication
- **Transparent communication:** lack of clear communication about data sharing processes hindering trust and limiting collaborations
- **Interoperability hurdles:** obstacles limiting the integration and interoperability of various data systems to enable an efficient data sharing infrastructure

# Recommendations

Bringing together multi-sector expertise, participants discussed and proposed the following recommendations across 5 key themes to improve efficient and effective data sharing capacity and cross-sector collaboration before, during, and after emergencies:

1. Coordinate data collection efforts and ensure the use of varied data types/sources
  - a. **Facilitate data collection with partners:** implement strategies to streamline data collection with collaborative partners to ensure a more cohesive and efficient data-sharing ecosystem
  - b. **Gather data early:** advocate for proactive data collection before emergencies or during initial response to enhance informed decision-making
  - c. **Emphasize creative data exploration:** encourage innovative thinking regarding diverse data types (quantitative, qualitative, unstructured) and sources beyond traditional health data to broaden the scope of insights (see Appendix A)
2. Build data literacy and data analysis capacity
  - a. **Implement workforce development initiatives:** invest in training programs on data analysis and data literacy to enhance the skill set of personnel involved in data-related tasks
  - b. **Form a city-level data analytics group:** create a data analytics group, potentially housed within the Mayor's Office of Operations, with a focus on surge analysis and the development of robust infrastructure capable of handling incoming data
  - c. **Implement data quality improvement systems:** manage the corrective actions identified from previous emergencies through NYC DOHMH's [After Action report process](#), and evaluate the extent to which the recommendations are being implemented
3. Enhance partnerships and collaborations across stakeholders, organizations, and sectors
  - a. **Collaborate with industry around lessons learned:** engage industry partners to leverage their expertise and share insights, particularly in areas like supply chain management to contribute to collective learning
  - b. **Establish a Data Trust:** implement a data trust (e.g., [Virginia Data Trust](#) for opioid use) to include data from various agencies and organizations (see Appendix B), foster confidence around data access, and ensure security
4. Improve public communication, transparency, and reporting around data
  - a. **Consider the cadence of reporting data:** deliberate on the frequency and timing of public data reporting to optimize transparency and relevance (navigating trade-offs between expeditious data dissemination and ensuring accuracy, reliability, and relevance)
5. Develop a plan to implement a collaborative data sharing infrastructure
  - a. **Establish a centralized platform:** create a platform listing available data sources to enhance accessibility and transparency
  - b. **Establish common data models:** implement standardized data models to enhance consistency and interoperability across collaborative efforts

- c. **Create shared and/or published data dictionaries:** develop comprehensive data dictionaries to establish a standardized reference among collaborating entities across stakeholders, organizations, and sectors
- d. **Create a legal mechanism (e.g., City Charter) to facilitate data sharing:** utilize a pre-established legal mechanism to streamline and facilitate data sharing processes, providing a foundation for collaboration and compliant data sharing practices
- e. **Establish data sharing/data use agreements (DUAs):** formalize legal agreements to delineate the terms and conditions of data sharing

## Proposed Partnerships and collaborations

### Key Considerations

Regarding key partnerships for data sharing before, during, and after emergencies, participants emphasized the need to build strong relationships across sectors, focus areas, and disciplines proactively (e.g., before an emergency) to leverage varied data sources/types and tap into diverse expertise.

### Cross-sector partnerships

With attention to the multifaceted nature of emergency preparedness and response, participants discussed the important role of cross-sector partnerships that reflect respect for the time and effort of everyone involved.

- **Public-private partnerships** to ensure the integration of diverse data sources, resources, and expertise, the following are suggested examples:
  - City agencies and mobile/cellular communication companies
  - City agencies and PPE suppliers
  - City agencies and hospitality industry associations
  - City agencies and service providers (e.g., transportation, water, food, etc.)
  - City agencies and hospitals/emergency departments
  - City agencies and lawyers familiar with documentation and how data can be used and shared
- Mutually beneficial partnerships between **city agencies, non-profit, community-based orgs, mutual aid groups, and faith-based institutions** to:
  - Solicit and appreciate people's needs and those who are most impacted
  - Build trust
  - Amplify the reach and impact of emergency response strategies
- Partnerships between city agencies and academia: to harness research and data modeling capacity

## Multi-level partnerships

Emphasizing the critical role of partnerships beyond city agencies, participants discussed the pivotal role of multilevel partnerships between city, state, and federal government before, during, and after emergencies to ensure a coordinated, unified, and informed response.

Partnerships **between city-state-federal government agencies** to facilitate:

- Coordinated legislation and regulations, including national level DUAs to ensure shared privacy and security protocols for handling/sharing data
- Real-time data sharing
- Resource allocation/resource mapping
- Unified emergency planning
- Collaborative research initiatives
- Joint data analysis
- Unified public communication to ensure the dissemination of accurate and timely information

## Partnerships among city agencies

Emphasizing the broad impact of emergencies across different sectors (e.g., health, education, transportation, etc), participants discussed the importance of partnerships between various city agencies to ensure communication and data-sharing at the city level to inform appropriate responses and resource allocation.

Partnerships **across city agencies**:

- Department of Health and Mental Hygiene (DOHMH)
- NYC Health + Hospitals
- Department of Buildings
- NYC Department of Transportation
- Metropolitan Transportation Authority (MTA)
- Department of Environmental Protection (e.g., water and sanitation)
- Mayor's Office
- City Council
- Department of Homeless Services & NYC shelter system
- Department of Education
- NYC Emergency Management
- NYC Police department (NYPD)
  - NYPD Counterterrorism Bureau

## Next Steps

This event will inform the design and planning of subsequent convenings and form the basis for setting up a community of practice that will:

- Share learnings and document best practices
- Develop case studies for effective data sharing
- Develop a set of data sharing principles to increase multisource data access, effective data use and data equity
- Design and develop a framework for effective collaboration to simplify and improve emergency data sharing processes

A planning committee composed of a subset of attendees from this event will participate in shaping the content and structure of the next Data Expo, which will explore the use of traditional and non-traditional data sources, and opportunities to leverage new types of data during public health emergencies.

## Appendices

### Appendix A: List of key data sources discussed related to emergency response and management

1. Health data
  - a. Hospitalization data
  - b. Mortality data
  - c. Syndromic surveillance data
  - d. Electronic health records
  - e. EMS data
  - f. Operational data
2. Mobility and transportation data
  - a. Mobility data
  - b. Evacuation zone data
  - c. Transportation data (e.g., MTA, PATH, ferries, bridges)
  - d. Cellular network/geolocation data
3. Community and social data
  - a. 311 data
  - b. Social media data/communication data (e.g., qualitative)
  - c. Anecdotes and lessons learned (e.g., qualitative)
4. Infrastructure and utility data
  - a. Utility and electricity data
  - b. Building residency data
  - c. Inventory data
5. Environmental and geographic data
  - a. Weather modeling data
  - b. Wastewater surveillance data
6. Management and planning data
  - a. Resources needed
  - b. Costs of efforts

7. Support and resource data
  - a. Inventory of aid groups
  - b. Resources and manpower

## Appendix B: Examples of discussed NYC data-sharing infrastructure

- [Open Data Initiative](#)
- [Github](#)