Howard Brown Health

DEVELOPING A PROGRAM TO RESPOND TO PUBLIC HEALTH PRIORITIES

CREATED BY :

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Introduction

From the first few cases in Wuhan, China, COVID-19 rapidly became a global public health emergency in early 2020. By March, the number of cases worldwide had surpassed 100,000, the WHO officially declared COVID-19 to be a pandemic, and states in the United States began implementing shutdowns in order to minimize community spread [1]. By April, the U.S. announced its first national masking and social distancing guidelines and hospitals in New York started to experience hospital bed and ventilator shortages [1]. Vaccines were not available until the end of 2020, and even then, limited supply necessitated a phased approach, with the people at highest risk of infection and severe disease to be vaccinated first [1]. Over the next two and half years, the United States experienced five waves or surges of the pandemic, three of which were driven by new variants [2]. As of the writing of this toolkit in October, 2022, over 96 million cases and 1 million deaths have been recorded in the United States, a disproportionate number of which have been from Black and Latinx communities [3]. In addition to the immense toll on health and the healthcare system, the pandemic has also had an enormous economic impact. By mid 2020, unemployment rates in the United State reached levels that had not been seen since the Great Depression [1]. With the greatest employment losses in the service and hospitality industries and healthcare, marginalized communities, including racial and ethnic minorities and LGBTQ individuals, were again disproportionately impacted [1].

This toolkit is based on experiences addressing the COVID-19 pandemic in Chicago, IL. Chicago is the 3rd largest city in the U.S. with an estimated population of 2.7 million. Despite being considered one of the most racially diverse cities in the U.S.; Chicago has a significant history of being racially segregated, as lower income people of color primarily living on the South and West sides of the city where we see higher rates of COVID transmission. As of October, 2022, Chicago has recorded 702,681 cases and 7,881 deaths [4]. The virus has had a disproportionate impact on communities of color; for example, 42% of deaths have been among Black community members [4], while Black residents make up only 29.2% of the city's population [5]. Similarly, while life expectancy dropped for all Chicagoans in 2020, Black and Latinx residents have experienced the steepest decline [6]. Black and Latinx Chicagoans were also disproportionately impacted by COVID-19 in other ways; in 2020, about a quarter of residents with these racial and ethnic identities reported having to miss important medical appointments, half experienced a reduction in income, half reported having to work in high risk environments before vaccines were available, and about a third reported having to delay paying for food [6].

To mitigate the spread of COVID-19, the Chicago Department of Public Health (CDPH) partnered with delegate hospitals and Federally Qualified Health Centers (FQHCs) to support COVID case investigation and contact tracing in the city of Chicago. In order to quickly build capacity and provide continuous training and support, CDPH partnered with Howard Brown Health (HBH) as a Technical Assistance (TA) provider. Howard Brown Health is an FQHC in Chicago that was founded in 1974 and is rooted in LGBTQ+ liberation. HBH has decades of experience doing disease intervention work and conducting case investigation and contact tracing interviews for HIV as well as other Sexually Transmitted Infections (STIs). Combined with HBH's capacity to provide education and training on healthcare best practices, this organization was a logical TA partner.

The purpose of this toolkit is to provide knowledge to program managers and decision-makers at similar hospitals and FQHCs and share best practices we developed over the past two years of building and sustaining a public health response to COVID-19. Our goal is to equip public health leaders with the tools to implement a similar program in response to future public health emergencies. The toolkit should enable readers to identify problems, strategize for addressing these challenges, as well as provide practical tools that can be used or modified for this purpose.

This toolkit provides the reader with a set of processes that guide program implementation to better serve communities as part of a public health response. It offers practical advice on understanding what needs to be in place to implement a similar program, presents the core elements and adaptable characteristics of the program as a range of options for program implementation, suggests how various organizations might support improvements in program implementation, and provides the reader with a wide range of resources to work with. It is is intended to be utilized, expanded, and adapted as it is implemented in similar environments.

This toolkit has been developed by the Howard Brown Health Technical Assistance Team, with support and feedback from the Chicago Department of Public Health, as well as community partners from the Illinois Primary Health Care Association, Project Vida, and Taskforce.

Situational Analysis

Emergency Public Health Response

One core function of public health has been to respond to emergencies, including war, natural disasters, and infectious disease outbreaks. What defines public health emergency response, and how does it differ from public health functions under ordinary (non-emergency) circumstances?

From the perspective of healthcare facilities and public health agencies working to rapidly implement a new intervention to address the emergent need, certain differences between emergency public health response and "business as usual" may be immediately apparent. Emergency public response:

- Is extremely time sensitive
- Often calls for greater access to resources, including funding, social services, and medical interventions
- Requires a very dynamic planning process with very little time for planning up front
- Necessitates interventions that will eventually end or turn into long-term crisis response

As different as emergency health response may feel, at its core, its goal is still the effective delivery of essential public health services to prevent morbidity and mortality, although the priorities, focus, and timing of these services may look different. For a detailed look at how emergency public health response differs from ordinary public health practice, please see **Appendix A1_Emergency Public Health Response.**

Finally, emergency response does not begin when the emergency begins. Instead, emergency preparedness should be a part of all public health planning and operations. In particular, organizations should:

- Employ staff who can easily be cross-trained and re-deployed to emergency response activities if the need arises
- Conduct regular organizational and community needs assessments to understand:
  - What assets your organization has available
  - What deficits your organization would have to fill in order to respond to different types of emergencies
  - What assets exist in the community that your organization could use through partnerships and/or referrals to respond to a crisis
  - What needs your community has and a plan for ongoing assessment of needs, which will be important to consider as part of an emergency response plan

Case Investigation and Contact Tracing Overview

Case investigation and contact tracing is a public health strategy that has been historically used to prevent the spread of communicable diseases. It has been called other names, including disease intervention and partner notification services, but the basic strategy has remained the same. The first contact tracing efforts were implemented in the 1930's to curb the spread of syphilis and has since been used for gonorrhea, tuberculosis, Ebola, and HIV [9]. Contact tracing activities, rendered quickly, effectively, and holistically with linkages to health and supportive services, can further primary, secondary, and tertiary prevention of infectious diseases [10].

- **Primary prevention**: Preventing infection and disease from occurring
- **Secondary prevention**: Halting the progress of infection to prevent disease development, limit its severity, and prevent transmission
- **Tertiary prevention**: Limiting disease progression in infected persons and maximize quality of life [9]

Case investigation involves interviewing a person who has been diagnosed with an infectious disease. During this interview, the case investigator provides education on treatment options and how to prevent infecting others, connects them with needed healthcare and/or social service resources, and determines all of the people who they may have exposed to the infectious disease [11]. Contact tracing is the process of informing those people that they may have been exposed to the disease, providing education about any available testing and treatment options, and connecting them with needed healthcare and/or social service resources [11].

While contact tracing has had an immense public health impact, it also has a highly stigmatized background in many communities. Particularly for contact tracing for sexually transmitted infections, contact tracing has been seen as having the impact of shaming people, revealing infidelities, and compromising people's privacy. In the past, contact tracing efforts have targeted marginalized communities including sex workers and drug users, and has led members of such communities to view these efforts as intrusive and harmful. As such, recent developments in contact tracing programs have shifted to a more community based approach, putting more emphasis on education and resources, and centering each person's ethical responsible to do their part to protect their community [9].

As the COVID-19 pandemic began to spread globally and prior to the availability of vaccine, contact tracing was rapidly implemented as it was considered to be the most effective approach to mitigate community spread. The Chicago Department of Public Health embraced the community based approach to contact tracing and provided funding and training to hospitals and Federally Qualified Health Centers throughout the city to use their existing relationships with the communities they serve to conduct contact tracing efforts among their own patient populations.

Case Study

One key lesson we learned was the importance of planning for public health emergencies by employing staff who can easily be cross-trained and re-deployed to emergency response activities if the need arises. Howard Brown Health has a long history of responding to public health emergencies, most notably the HIV/AIDS epidemic, and has been a pioneer at developing effective prevention and response strategies to infectious diseases. As such, disease intervention specialists (DIS) have long been a core part of Howard Brown Health staff.

In addition to permanent DIS staff, HBH employs many staff with the skills necessary for DIS or contact tracing work including affirming and respectful communication skills, ability to use agency data collection systems, strong understanding of patient confidentiality, and experience developing trust with HBH's patient population. This staffing model allowed HBH to quickly mobilize a contact tracing team at the start of the COVID-19 pandemic, using both full time DIS staff and re-deploying staff from other teams across the agency who had the skills and expertise to be quickly and easily trained in COVID-19 contact tracing work.

Organizational Buy-In

Ethical Considerations

Public health emergency response is often based in part on ethical considerations. If people are suffering, and your organization has the capacity to alleviate or prevent suffering, what ethical obligation does your organization have to implement a response? The primary motivation for developing a case investigation and contact tracing program in response to COVID-19 was an ethical one, namely that people were getting sick and dying, and as an organization with the capacity to prevent and control communicable diseases or infections, there was an ethical obligation to. Here we will address some of the core ethical principles to consider during public health emergencies:

Humanitarian Principles	Refers to the desire and sense of moral obligation experienced by people in industrialized nations to relieve human suffering, especially in response to short-term disasters and emergencies [12].
Social Justice	Refers to the distribution of wealth, opportunities, and rights within a society. Social justice acknowledges that the accumulation of goods and opportunities tends to be concentrated among groups with privilege at the expense of groups who are oppressed. Social justice applied to public health recognizes that those with less privilege are more likely to be harmed by a health problem and that those with more privilege have a moral obligation to ensure an equitable distribution of resources to address these health problems [13].
Global Justice	Like social justice, global justice is concerned with the unequal distribution of resources on a global scale but goes further to say that this inequality is a direct result of colonization, and therefore former colonial powers have an ethical obligation to repair some of the harm they caused by responding to public health emergencies in developing countries [14].
Self-Preservation	While not exactly an ethical principle, it is important to note that epidemics place all of humanity at risk, so responding to a public health crisis in another part of the world can actually be seen as an action taken in self-interest [14].
Principle of Least-Infringement	Once a government has decided to take action to respond to a public health emergency, the response itself may create ethical dilemmas, particularly around the restriction of individual liberty. Restrictive measures such as quarantine, travel restrictions, and personal protective equipment requirements should consider the principle of least-infringement, meaning that the action that can infringe on an individual's liberty the least while still being effective is the one that should be implemented [14].

Prioritization Matrix

Other factors besides ethics will likely be considered when an organization is deciding whether or not to implement a new program in response to an emergent need. These factors may include:

- The nature of the public health emergency – how serious is it, how time sensitive a response must be, whether the emergency impacts the population your organization serves
- Organizational Capacity – does your organization actually have the ability to implement this program, either through existing resources and expertise or by investing in new hiring, purchases, partnerships, etc. Is the organization appropriately positioned to serve impacted clients and communities?
- Business Goals – is this new program aligned with the strategic plan of your organization? Can it contribute to positive growth and expansion?
- Financial interests – is this a program your organization has the financial ability to support? Are there funding opportunities available?

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Listing out the criteria that are important to your organization and assigning them weighted scores based on your analysis of the situation can be a good way of demonstrated that a particular program is a good idea for your organization to implement. This can be used in a number of ways. Your organization could determine a minimum score necessary for a program to be deemed or a priority. Or if you have several program options, you could compare their scores to make a decision. The table below provides an example of a prioritization matrix. For a blank template, please see **Appendix B1_Prioritization Matrix**.

Criteria	Weight (1-5)	Score (1-5)	Total
Public Health Necessity	5	5	25
Organizational Capacity	3	5	15
Strategic Plan	5	5	25
Funding	5	1	5
Total Score			**70**

Case Study

The HBH staff who implemented the initial COVID-19 contact tracing program knew that the COVID-19 pandemic presented an obvious public health crisis to the communities that the organization served, and that it required an immediate response. They were able to get organizational buy in given the urgency and severity of the public health need and the capacity of the organization to respond.

However this was not a seamless process. We initially had guidance from a medical director and team leaders from other departments within the organization, and it took some time before a dedicated team was put in place to focus specifically on COVID-19 contact tracing. While there was a skilled staff available to support this program form the beginning, there was still a learning curve.

We also had to be mindful that staff that was initially supporting COVID-19 contact tracing had other primary duties. This meant that we had to have significant buy-in from departmental leadership to ensure that staff could reasonably handle the additional workload while still fulfilling their primary obligations. The initial process was ultimately successful, but it took flexibility and continuous planning to work effectively.

Core Elements and Adaptable Characteristics

For the remainder of this toolkit, we will end each section with a summary of core elements and adaptable characteristics so that organizations seeking to replicate this, or a similar public health emergency response program can develop a checklist of what they should be considering and implementing.

For each program component, we have considered which elements are absolutely essential to program success and which elements are adaptable based on the context. Organizations considering replication should assess their capacity to implement the core elements of the program, and which adaptable characteristics they should modify to suit the needs of the organization or target population. The following table describes the core elements and adaptable characteristics of the situational analysis stage of the program.

Program Component	Core Elements	Adaptable Characteristics

Decision making process	Program planners should specifically present the factors that are most relevant to their organization's decision-making process in order to gain buy-in	Your program must be considered a priority by your organization to gain buy-in but the factors that are considered may be different from organization to organization
		• Consider:
		  ○ Values
		  ○ Business Goals
		  ○ Financial Success/Stability
		  ○ Reputation/highlighting expertise
		  ○ Expansion/Growth

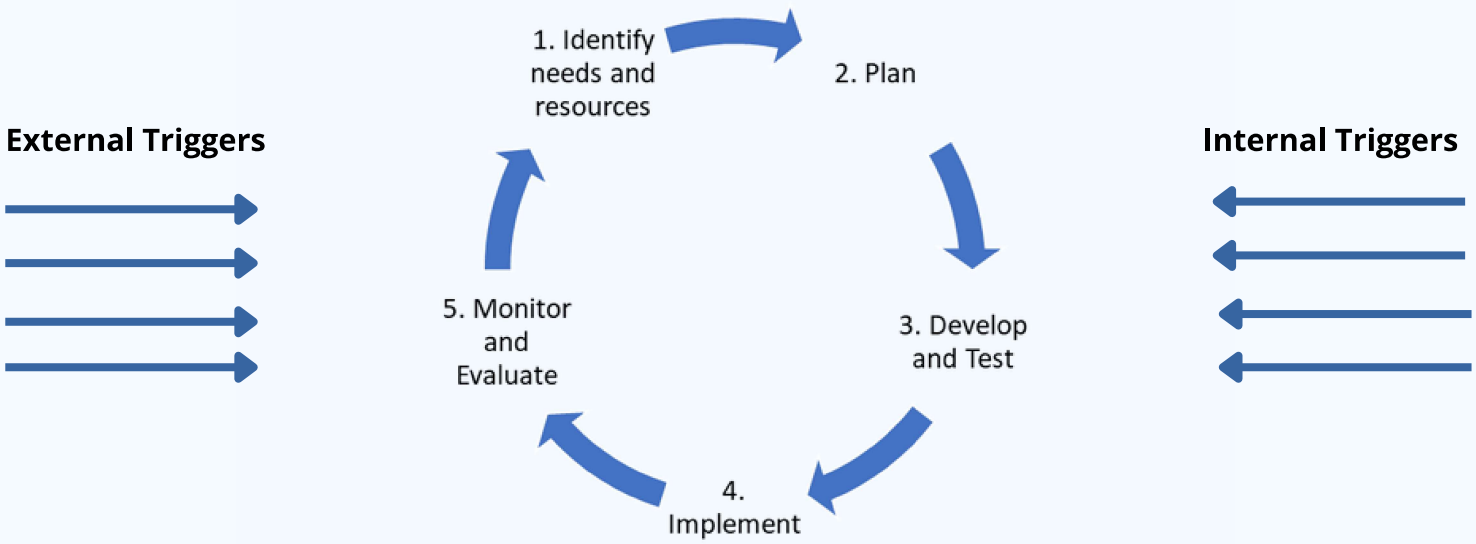
Capacity to implement program	The organization must be able to implement and monitor the proposed program	Your organization must have the ability to implement the program you propose but this can be due to:
		  ○ Existing staff expertise and technology
		  ○ New resources to hire and train staff
		  ○ A combination of both
		  ○ Access and credibility within impacted communities

Public Health Need	There must be a public health need that could mitigated through your organization's intervention	Obviously, there must be a need that your program is responding to, but the nature of this need can vary:
		  ○ Can be an infectious disease, a natural disaster, a man-made disaster
		  ○ Can be local, national, or global
		  ○ Can impact everyone in the population or just certain groups

Program Planning

Planning Process

Planning a program to respond to a public health emergency involves constantly evolving as the situation changes. We have heard the phrase "building the plane while flying it" a lot throughout the COVID-19 response. For that reason, emergency public health response program planning is a very cyclical and agile process. The model below demonstrates what the planning process looked like for the healthcare facility CICT program. For an example of how this program changed over time, please see Appendix: Sample Scopes, which highlight how the scopes changed from year 1 to year 2.



1. **Identify needs and resources:** Program planners must always be considering the needs of the communities they are serving, and since community needs change rapidly during a health crisis, this is not a one-time, static process. In addition, human, technical, and financial resources will likely change over time and require a change to the program design.
2. **Plan:** This is stage where you plan your intervention, or modifications to the intervention that has already started. This can include designing scopes, goals, a work plan, and determining resource needs.
3. **Develop and Test:** The development stage involves creating and acquiring the resources decided upon in the planning stage. This can include developing workflows and tools for staff to use, creating a data collection platform, hiring staff, and developing training materials. Sometimes, these resources should go through a testing process before being implemented. For example, your data collection methods should be tested by people who are familiar with how the end user will be using it (or the end users themselves), to ensure that it is acceptable and functional.
4. **Implement:** Implementation includes communicating to and training staff on the processes and tools decided upon, the day-to-day work of performing the intervention, and regular training and support provided to staff, including self-care strategies.
5. **Monitor and Evaluate:** This includes analyzing quantitative data on the outcomes of your program, as well as formal and informal qualitative feedback from program staff, and clients when possible. Program managers should schedule regular times to learn from staff about their experiences and implement some sort of help request or ticketing system to keep track of issues that staff experience.

- **Internal Triggers:** Sometimes a new planning cycle is triggered by factors within the program team. These can include:
  - Staff finds technology difficult
  - Current workflow is prone to technical glitch or human error
  - Staff suggests more efficient workflow
  - Internal organization policies change
  - Staff experience burnout
- **External Triggers:** Sometimes a new planning cycle is triggered by factors external to the program team. These may be outside of your control, but are important to respond to:
  - Change in resources
  - Change in policies or strategic priorities
  - Health emergency becomes more or less severe, or emerging trends are identified such as changes in impacted communities
  - Media changes public narrative
  - Event, holiday, weather, or some other occurrence

Planning for Sustainability

This is an important component of planning a program in response to a public health emergency. By definition, many resources must be deployed very quickly. It is important to think ahead both to how these resources can be re-deployed or full or partially integrated into routine operations when the emergency is no longer present or becomes endemic, and how to maintain these resources for when the next crisis occurs. This also enables programs to shift focus quickly as the severity of the pandemics increases and wanes. This program planned for sustainability in the following ways:

- Making public health workforce development a primary goal
- Hiring staff from communities most impacted by COVID-19
- Mobilizing resources to provide job skills trainings, including cross-training of staff in other public health and healthcare roles
- Defining scopes of work outside of case investigation and contact tracing

Organizational Readiness Assessment

When initiating planning, it is important to assess the strengths and weaknesses that exist both within your organization and outside of it. A useful tool for this is a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, in which you consider factors internal and external to your project that are helpful and harmful. An example from the beginning of Howard Brown Health's COVID-19 contact tracing program is presented here. For a blank template, please see **Appendix C1_SWOT Analysis.**

STRENGTHS	**WEAKNESSES**
• Existing contact tracing expertise • Existing research and epidemiology capabilities • Established trust with community/patient population	• Limited staff capacity • No Spanish speaking contact tracing staff • No clear management of contact tracing team established
OPPORTUNITIES	**THREATS**
• Relationship with research team and software for data collection • Grant funding for contact tracing • Government funding for COVID-19 tests • Free Contact Tracing training through Johns Hopkins University	• Shelter-in-place order and need for remote work • Misinformation • Unequal access to healthcare

Logic Model

A logic model is a good way of thinking through what resources and activities are needed to achieve the program's goals. By visualizing the logical steps from inputs to outputs to outcomes, program planners can identify gaps, become aware of assumptions, plan for challenges, and develop a good evaluation strategy. There are many different types of logic models, but all contain:

- Inputs (or resources)
- Activities (or objectives)
- Outcomes (usually divided into short-term, medium-term, and long-term, can be thought of as the program impact)

Most logic models also contain some or all of the following:

- Outputs (the services and materials that are produced)
- Goal statement
- Description of the Problem/Situation
- Assumptions
- Challenges

Creating a logic model can be done through a series of if-then statements. For example,

1. ***If*** we have access to this resource, then we can perform this activity.
2. ***If*** we perform this activity, then we will provide a service to X number of patients.
3. ***If*** we provide that service to X number of patients, then we will have this impact on their behavior in the short term.
4. ***If*** we have this impact on patients' behavior in the short term, then we will have this impact on their health outcomes in the long term.

Below is an example of a logic model of the healthcare facility COVID-19 contact tracing program. For a blank logic model template, see **Appendix C2_Logic Model.**

Situation: In the beginning of 2020, COVID-19 began to spread rapidly across the U.S., resulting in many hospitalizations and fatalities. Until vaccines were developed, isolation, quarantine, PPE, social distancing, and contact tracing were the only tools available to stop the spread of this disease, which disproportionately impacted low-income people and communities of color.

Inputs	Outputs		Outcomes		
	Activities	Participants	Short-Term	Medium-Term	Long-Term
• Experience with contact tracing • Experience with training and education • Pre-existing free contact tracing training • Funding	• Hire staff • Develop curricula and train staff • Create scripts • Create data collection tools • Perform CICT work	• Newly hired CICTs • People who test positive for COVID-19 • People who were exposed to COVID -19	• People with COVID isolate • People exposed to COVID are notified • People impacted by COVID are connected to resources	• Local public health workforce is expanded • Pandemic slows/stops	• Public health infrastructure is more community based • Community develops more trust in the healthcare system

Assumptions

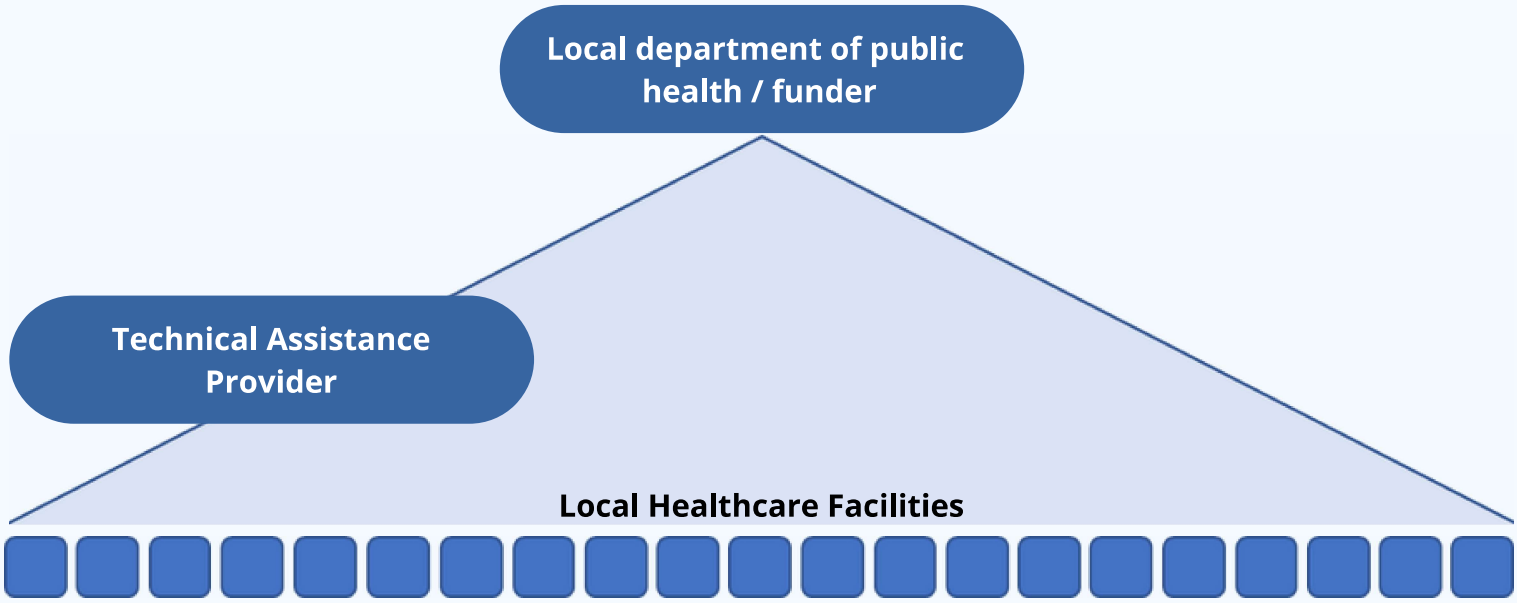
- Contact tracing is an effective tool for stopping the spread of infectious disease
- People will be more likely to share information with case investigators who reflect their identities

Challenges

- Rampant misinformation
- Initially no vaccine, then limited supply and lots of hesitancy to receive it
- High positivity rate -> high workloads

Program Model

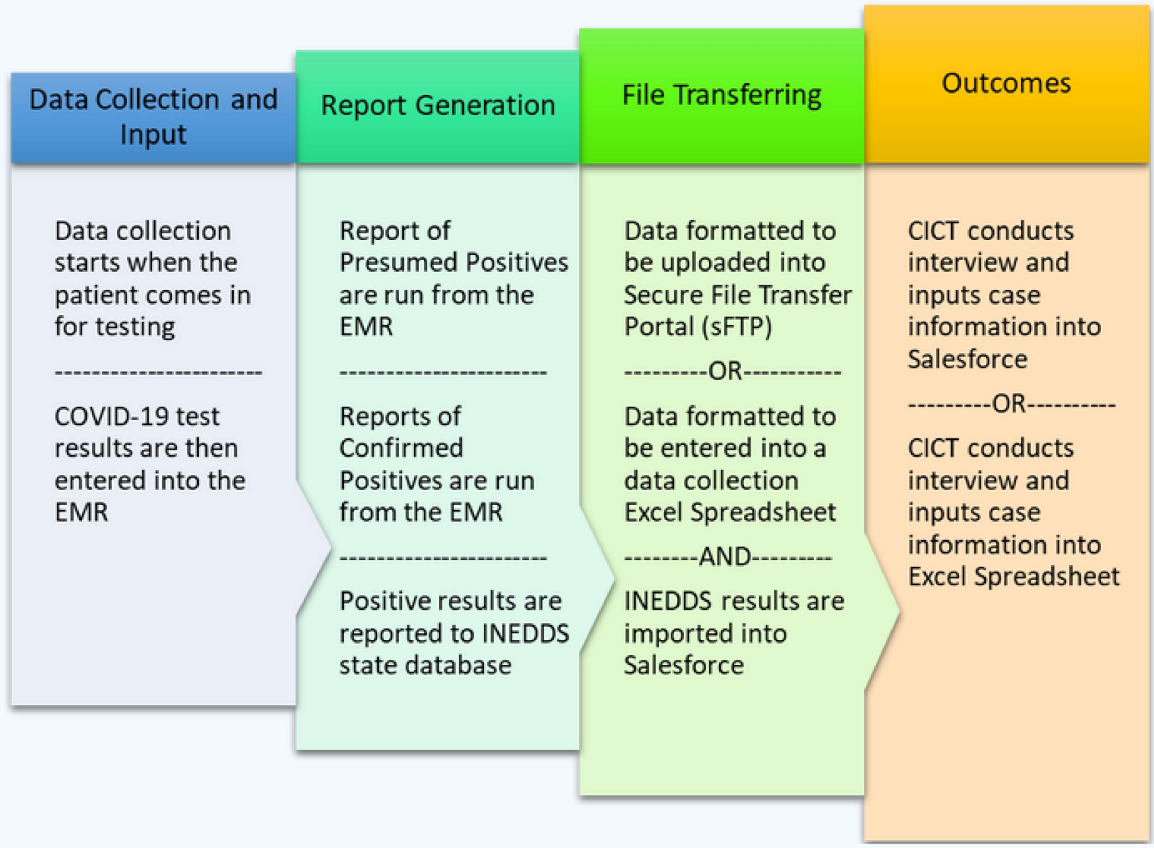
This program intentionally designed a decentralized model, in which case investigation and contact tracing (CICT) was performed by healthcare facilities, supported by the city department of public health and a technical assistance provider. This model was implemented for several reasons. CICT requires an immense amount of trust between the CICT provider and the patient, as it asks patients to reveal intimate details of their life to someone they have never met, often over the phone. Furthermore, CICT providers play a crucial role in dispelling misinformation and communicating essential health information to those impacted by an infectious disease. As such, this program was designed with the assumption that people would be more willing to share honestly and to follow health guidelines if they were speaking to members of their own community, to whom they could relate. Therefore, instead of concentrating all resources at just one agency, this program chose to fund over two dozen local healthcare facilities with established presences in their communities and provide centralized technical assistance and capacity building to help them implement contact tracing initiatives at their own facilities and with their own patients. The funder was the local department of public health, which has the primary responsibility for stopping the spread of infectious diseases in its jurisdiction. The technical assistance provider was a healthcare facility that had a long history of implementing both disease intervention services and training and education.



Data Infrastructure

The data infrastructure for this program was very complex and continued to evolve as it involved getting patient test results from each facility's electronic medical records to the contact tracers, and then the contact tracers needed a reliable way to collect data from their interviews and to document identified contacts. Additionally, since this was a multi-site project, we needed a platform that was HIPAA compliant and could restrict data visibility for each user to their organization's data only, but also allow the Chicago Department of Public Health to see all data in order to monitor the efficacy of the program. This program ended up using a CRM platform, Salesforce, and working with a third-party company to design the user interface and the behind-the-scenes data infrastructure, including a secure file transfer program to upload case data into Salesforce.

However, this system took many months and a lot of funding to establish. Before that, programs were able to launch more quickly by using a more simplified process, simply entering case data in a spreadsheet, and entering the case interview data directly into that same spreadsheet. It is not unusual, and generally necessary, within emergency response for data systems to evolve from simple and manual to complex and automated systems over time. For an example of the temporary data collection tool that was designed, please see the appendix. The following diagram provides a visual representation of this program's data infrastructure.



Budget

The process of creating a budget not only helps ensure an effective use of financial resources and creates a justification for the cost of your project, but it also helps program planners think through and adjust the resources necessary to achieve their goals. For the case investigation and contact tracing programs, the vast majority of funds were spent on human resources, with some spent on the technology required to enable staff to work and communicate with clients and the program team remotely.

There are several ways that program managers considered sustainability when creating their budgets. Knowing that their organizations could not guarantee continued employment to all of the staff needed to meet the goals of the CICT program, several organizations chose to hire some staff directly and contract with a temporary employment agency to meet the higher pandemic level staffing need. Additionally, some organizations chose to create positions with dual roles, doing both case investigation and contact tracing and something else, in order to facilitate a smooth transition to post-pandemic operations.

For a blank budget template, see **Appendix C3_Budget.**

CICT 2021-2022 Budget						
Expense Type	**Description**			**% of Budget**	**YTD**	**Remaining**
Personnel						
Title	**Name**	**Salary**	**% Allocation**	**Cost**	**--**	**--**
Manager of Contact Tracing	XX	##	100%	##	##	##
Contact Tracing Coordinator	XX	##	100%	##	##	##
Contact Tracing Coordinator	XX	##	100%	##	##	##
Bilingual Contact Tracing Specialist	XX	##	100%	##	##	##
Bilingual Contact Tracing Specialist	XX	##	100%	##	##	##
Bilingual Contact Tracing Specialist	XX	##	100%	##	##	##
Bilingual Contact Tracing Specialist	XX	##	100%	##	##	##
Dual CHW - CICT + Health Educator	XX	##	50%	##	##	##
Dual CHW - CICT + Health Educator	XX	##	50%	##	##	##
Associate Director of Public Health Intervention	XX	##	10%	##	##	##
Total Salary				**35%**	**##**	**##**
Fringe						
Benefit Type	**Rate (%)**			**Cost**	**--**	**--**
FICA	##			##	##	##
Workers Comp	##			##	##	##
Health/Dental Insurance	##			##	##	##
Long-term Disability	##			##	##	##
Short-term Disability	##			##	##	##
Life Insurance	##			##	##	##
Total Fringe				**13%**	**##**	**##**
Travel						
Type	**Description**			**Cost**	**--**	**--**
				$0	##	##
Total Travel				**0%**	**##**	**##**
Supplies						
Type	**Description**	**Unit Cost**	**Quantity**	**Cost**	**--**	**--**
IT	Laptop	##	10	##	##	##
Total Supplies				**4%**	**##**	**##**
Contractual						
Temp staff				##	##	##
Total Contractual				**68%**	**##**	**##**
Total Direct Charges				**83%**	**##**	**##**
Indirect Costs on Non-Contractual						
Total Direct Non-Contractual			**Rate (%)**	**Cost**	**--**	**--**
XX			21%	##	##	##
Total Indirect Charges				**17%**	**##**	**##**
Total				**100%**	**##**	**##**

Planning Staffing Needs

The Technical Assistance team developed a Contact Tracer FTE calculator as a tool to help organizations determine their staffing needs as they began budgeting and then hiring for this program. It uses both facility specific data (number of tests, number of positives) and average data about contact tracing (average interview contact index, average number of indexes a contact tracer can work through in a week) to make an estimate of how many FTEs are needed to complete the workload at that organization. When quickly building a program in response to an emergent public health need, such a tool is useful for determining an appropriate distribution of resources. For a copy of the FTE Calculator, see **Appendix C4_FTE Calculator.**

FTE Calculator

	A	B	C	D	E	F	G
1		**# of COVID-19 Screenings**	**# of Positive Tests (Indexes)**	**Positivity Rate**	**# of Weeks you have been conducting COVID-19 Screening**	**Estimated # of Contacts elicited for # of indexes**	**# of FTE's Needed**
2	**Spreadsheet Template**	Entered by User	Entered by User	Calculate by (C2/B2)*100	Entered by User	Calculate by C2*1.5	Calculate by (C2/E2)/20
3	**Example**	1000	100	10%	5	150	1

1. Assumes an interview contact index of 1.5
2. On Average a full-time contact tracer can conduct the required number of phone contacts, interviews, re-interviews, and contact notifications for (20) index patients per week.

In addition to planning *how many staff* to hire, this program was also intentional about who to hire. Workforce development was an explicit goal of this program, so healthcare facilities were encouraged to post job openings with a low threshold of requirements. For example, CICTs were not required to have more than a high school diploma or GED, or to have extensive experience in the field. Instead, familiarity with the communities that they would be serving, and the ability to speak the language(s) spoken by those communities were prioritized. Once hired, all CICTs were given extensive and continuous training and support to ensure their success and to adhere to all requirements for confidentiality and records security. An example of a job description used to recruit staff to these positions is shown below:

JOB TITLE: Bilingual Contact Tracer
POSITION SUMMARY:
The Bilingual Contact Tracer will assist ongoing efforts by Howard Brown Health (HBH), the Chicago Department of Public Health (CDPH), and the Illinois Department of Public Health (IDPH) to prevent transmission of COVID-19 in the State of Illinois.
PRINCIPAL DUTIES AND RESPONSIBILITIES:

1. Conduct interviews with patients who are infected with SARS-COVID-19 and refer their close contacts in for examination and screening; notification of possible exposure to infection is done confidential via telephone.
2. Ensure all data collection pertaining to SARS-COVID-19, is collected utilizing approved data collection tools and procedures.
3. Ensure that appropriate progress notes and orders are recorded on patients EMR
4. Participate in and complete Case Investigation and Contact Tracing training and other trainings as required.
5. Participate in special events as directed by manager/project coordinator.
6. Assist CDPH and HBH in field and outreach activities.
7. Maintain accurate statistics and reporting.
8. Assure that all project policies conform to policies of HBH.
9. Maintain highest level of client confidentiality.
10. Perform other duties as assigned.

QUALIFICATIONS, KNOWLEDGE, SKILL REQUIRED:

Required:

- *Bilingual Spanish/English*
- *High School Diploma or Equivalent*
- Must be able to demonstrate strong communication, organization, and written skills
- Must have access to reliable transportation
- Must be willing to work and travel to multiple Howard Brown sites
- Must be able to consistently demonstrate minimum programmatic standards for Partner

Preferred:

- BA/BS in social services or related, OR more than 2 years professional experience in HIV/STI Prevention or related Public Health field

ADA SPECIFICATIONS

- Requires ability to speak audibly and listen actively.
- Requires ability to use computers, telephones, and other office equipment.
- Requires ability to sit for extended periods of time.
- May require occasional bending and lifting up to 25 pounds.
- May require periodic travel.

EQUAL OPPORTUNITY STATEMENT:

Decisions and criteria governing the employment relationship with all employees at Howard Brown are made in a non-discriminatory manner, without regard to race, color, creed, religion, national origin, sex, marital status, pregnancy, disability, sexual orientation, gender identity, veteran status, age, FMLA status, or any other factor determined to be unlawful by federal, state, or local statutes.

Case Study

Planning for a public health emergency can be challenging. We were fortunate that we had a significant history of doing Disease Intervention work for HIV and other STIs, which is very similar to COVID-19 contact tracing work. This meant that the foundation to do the work was in place, staff were available, and we were able to start doing COVID-19 contact tracing work earlier in the pandemic.

While we had a plan in place and staff available to do the work; we had to implement new data collection tools and software that staff needed to be trained on, and even this process required modifying the tools multiple times prior to implementing Salesforce. Even after implementing Salesforce, continuous monitoring and platform updates were required to sustain, and make the process easier for staff, and more accessible for community members.

Core Elements and Adaptable Characteristics

For each program component, we have considered which elements are absolutely essential to program success and which elements are adaptable based on the context. Organizations considering replication should assess their capacity to implement the core elements of the program, and which adaptable characteristics they should modify to suit the needs of the organization or target population. The following table describes the core elements and adaptable characteristics of the planning stage of the program.

Program Component	Core Elements	Adaptable Characteristics
Goal and Objectives	• Must have a goal related to ending, alleviating, or responding to the public health emergency • Goals should have SMART (specific, measurable, achievable, relevant, and time-bound) objectives • Goals and objectives may be determined in part or completely by a funder	• Goal should seek to address the public health emergency in a way that your organization has the capacity and expertise to achieve • An organizational readiness assessment can help determine the specific ways in which your organization can intervene • It may be useful to create a workplan in which you list out every goal, objective, and the activities that support them
Logical steps to achieve goal	• Each activity should logically be able to move your project towards its goal(s)	• The logical connection from action to result can be based on data, previous experiences, or a theoretical model • You can use a logic model to help think through these logical pathways
Budget	• You must have a plan for how many resources your program needs and how these resources will be distributed	• If you are starting a project quickly, you may not have any external funding, but you should still create a plan for where your resources will come from, such as using a percentage of existing staff's time on your program activities
Data Infrastructure	• Data on your patients/participants/community you are serving • Method for collecting data on program activities • Method for analyzing program data to inform programmatic changes • Protections to safeguard privacy and data security	• Data infrastructure can be simple or complex • If you need to launch quickly and don't have any funding, using a program you already have like Excel will work • If you have the time, funding, and technical understanding, you may be able to invest in infrastructure with more capabilities, process automation, and/or integration between systems

Hiring and Onboarding Plan	• You must determine how many staff you need and where they will come from
	• Staff will need to be very quickly trained, likely on a variety of topics, including:
	  ○ Information about the health emergency
	  ○ Job specific skills
	  ○ Data security and privacy
	  ○ Data collection procedures
	  ○ Cultural humility and information about the communities you serve
		• Staff can be recruited by:
		  ○ Utilizing existing staff from your organization
		  ○ Hiring new staff to your organization
		  ○ Using a temp agency
		  ○ A combination of the above
		• You can choose to hire staff with existing expertise or make training and workforce development a part of your program plan
		• Training can be done by:
		  ○ You/your program leads
		  ○ External trainings
		  ○ A training and technical assistance provider
		  ○ A combination of the above

Implementation

The program implementation section will focus on the key aspects of implementation, including technology platform development, hiring, and training, writing processes and procedures, creating tools and job aids to support implementation, and making continuous improvements to the program plan.

Platform Development

Platform development refers to the development of the fundamental software that supports the work being done, and that provides a platform for application development. This may look like using your organizations' existing software (ex: writing case investigation scripts in Microsoft Word and collecting data in Microsoft Excel), or it may look like using, creating, or customizing new software. However, no matter what tools you are using, you will have to think through how you can meet the goals of the program and the needs of your organization, the end users, and potentially your funder.

There are several ways to approach the platform development process, and it largely depends on the resources you have available. Some organizations may have internal capacity to build and/or maintain the platform needed, while others may need to partner with external software developers to meet their needs. If the program is externally funded, the platform may be provided by the funding agency; such a platform may or may not require integration with your agency's existing systems.

There are typically seven phases in the platform development process. The table below will discuss each phase in greater detail and gives an idea of what to expect throughout the process [15].

Phase of Development	Process [15]
Planning	The planning phase requires the project managers and development staff to collaborate with operations and security teams to ensure that the project goes as intended. Items to be addressed in the planning phase include: • Resource Allocation • Capacity Planning • Project Scheduling • Cost Estimation • Provisioning
Requirements	In the requirements phase, software architects, development teams, and project managers work with subject matter experts (SMEs) to determine what program needs must be addressed though software and which, if any, processes need to be automated. The requirement phase usually ends with documentation of all requirements.
Design	In the design phase, software architects work on the framework, and they can either start from scratch or use existing components, while the developers work on design patterns.
Software Development	During software development, the goal is to actually produce the program as quickly as possible. It is important for the the software developers and program managers to coordinate during this phase in order to ensure that programmatic needs and expectations are met.

Phase of Development	Process [15]
Testing	The testing phase is the arguably most important one in platform development process. Without testing the product, a company cannot be certain about bugs or errors prior to release. Testing is done to ensure quality, and it includes several methods. Some, such as checking the quality of code, functionality testing, integration testing, and security testing, may be done exclusively by the software developers. For a platform intended to be used by public health professionals, user acceptability testing is incredibly important. Can the end users easily use the platform? Will it serve the purpose it is intended to serve. Are there any technical issues that could serve as barriers to people trying to access your program?
Deployment	During deployment, the software developers take a step back as most processes in the platform should be fully automated. In this phase, the program managers will have to train all end users and begin using the platform for its intended purpose. During deployment, there may continue to be minor changes made in order to fix bugs or optimize workflow, but nothing major should be changed at this point.
Maintenance	Platform development does not end with the last phase, dubbed Operations and Maintenance. Since software constantly requires maintenance to make sure everything runs properly, the last phase is simply an "end of the beginning" phase. In Operations and Maintenance, the program is monitored for bugs and defects. These bugs and defects must be reported and fixed as soon as possible. If your platform has a lot of users, you will need to develop a system for them to report bugs and defects that they encounter. Furthermore, as public health priorities shift and new information becomes available, changes may need to be made in order for the platform to achieve this purpose (for example, changes to scripts, additional data collection fields, etc...)

Our Process

For our project, the platform (Salesforce) was adapted for use in COVID-19 case investigation and contact tracing and developed by an external software developer. This approach best suited the needs of the program, given the complexity of data sharing and security with so many different organizations using the same platform. The process was very similar to the one illustrated in the above table but was not as linear of a process.

First, given the urgent nature of the COVID-19 pandemic, our CICTs had to start conducting case investigation and contact tracing work *before* Salesforce was fully developed and ready to be deployed. In order to facilitate this, we temporarily utilized software that all organizations would already have - Microsoft Word and Excel. We wrote case investigation and contact tracing scripts in Word and created a temporary data collection tool in Excel. This tool had some basic navigation features, including hyperlinks to help staff move throughout the sections, and help text to prompt staff with the correct interview questions. For a copy of this tool, see **Appendix D1_Temporary Data Collection Tool.** For step by step instructions on how this tool was created, see **Appendix D2_Temporary Data Collection Tool Instructions.**

Our process had some challenges and constraints. The Technical Assistance team (who were responsible for training all of the end users) and the majority of end users did not get involved until the Planning, Requirement, Design, and Software Development processes were already well underway, which limited the amount of feedback that could be provided to the developers. Additionally, the urgency of the COVID-19 pandemic meant that we had to rush to deployment as quickly as possible and sometimes had to settle on "acceptable" functionality rather than "ideal." The vast majority of end users had never used the software in any capacity, and quite a few had very little experience with computers at all. Complicating the steep learning curve still further was the short timeframe between the Technical Assistance team learning the software and training others. We will go into greater detail of what that looked like below, but our ability to be flexible and pivot was crucial to ensure that we began our platform integration as soon as possible.

Testing
Before the platform went "live," certain key users were provided with training and access to the beta environment during User Acceptance Training (UAT). This allowed the team to ensure that the features worked as intended and gave the developers a chance to make changes before the platform was deployed.

Training
Training began with the Technical Assistance team taking part in “Train the Trainer” sessions in order to prepare us to provide the end user training to the CICT staff on platform use and navigation.

Once the “Train the Trainer” sessions were completed the Technical Assistance team modified training materials provided by the software developers to create comprehensive, step by step user manuals. The TA team then provided training to all CICTs and program managers across sites to ensure that they were comfortable navigating the platform. Training included live instruction, demonstration, and practice activities using test data.

Deployment
When training was complete, the platform was deployed to start conducting case investigation and contact tracing interviews. Testing essentially continued during deployment, because as end users started using the platform, they identified more features that were not operating as intended. At this time, no major changes could be made, but improvements were implemented regularly to address smaller issues, or those that were considered to be a priority.

As the project progressed new processes were implemented based on staff input, project needs, and overall platform performance. Primary issues identified were with language used in the script, data security and workflow automation rules that blocked people from seeing data they should have access to, and adding more functionality for data collection and report building purposes.

Maintenance
This was an ongoing process. The goal is to have the platform function consistently across all users. Helpdesk tickets are submitted to report any anomalies, and workarounds are created to limit disruptions to workflows. For our purpose, the software developer maintained the platform and made changes based on priority of need.

Additionally, regular updates had to be made as the knowledge of COVID-19 and the program evolved. Language used, public health guidelines, and information about vaccines and therapeutics all had to be updated on a regular basis in order to continue the functionality of the platform.

Lessons Learned
One of the biggest challenges was modifying platform features in a timely manner. Platform features will not be perfect when you launch a program, and we experienced this as well. This required us to develop workflow workarounds until the features were updated.

Another challenge is managing expectations. When implementing new technology; we always want it to function straightaway with no issues. This is not a realistic expectation. Specifically when working in public health as the science often shifts much faster than the technology is able to adapt.

That does not mean that the work cannot be done. Teams have to be proactive in trainings, transparent, realistic, and communicative so that everyone is on the same page. We experienced this as well, and it was helpful and necessary to be flexible and proactive as much as possible.

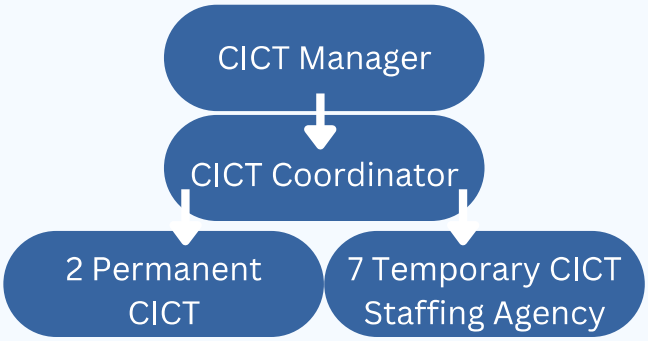
The final challenge for us was the nature of the program and needing to learn in the midst of doing the work. We were constantly learning and evaluating while working with our team, delegate agencies, and the platform, and pivoting quickly when something was not effective. These lessons made our programs stronger, and we hope that they can be used as guidance for similar organizations that may want to implement some form of software to support their work.

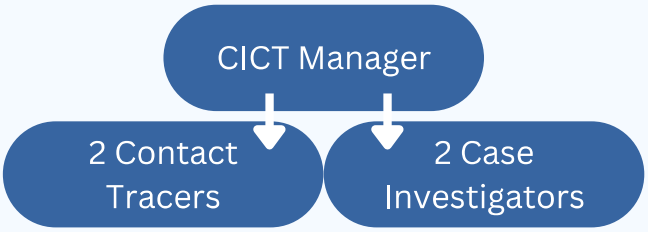
Hiring, Training, and Workforce Development

Hiring and Staffing Models
While CDPH defined the scopes and many of the procedures for all participating organizations, each healthcare facility was given the flexibility to decide how they would staff their CICT teams. Some organizations utilized current staff to be a CICT or CICT program manager. Others hired new staff, and some used temporary employment agencies.

Furthermore, facilities designed their own staffing models, dividing roles and responsibilities in different ways to accommodate their needs. For example, one of the larger organizations with a very high number of cases employed the model on the left, with a manager, a coordinator, and a combination of permanent and temporary staff, all of whom did both case investigation and contact tracing. One of the smaller organizations with a lower number of cases used the model on the right, with one manager, and 4 total staff, two of whom only did case investigation, and two of whom only did contact tracing. Larger organizations had some additional roles on their teams, such as Data Coordinators, Practice Managers, and Infection Prevention Specialist.

Identifying personnel to support training and development of staff was particularly critical in the CICT effort, though those staff may have other responsibilities in addition to training. This illustrates the wide range of the various capacities and resources of academic institutions, medical institutions, and healthcare nonprofits.





Training
While each facility was responsible for ensuring that each of their staff members received adequate training, CDPH and the technical assistance team provided resources, recommendations, and guidelines to assist in the training and onboarding process. Most of the healthcare facilities were establishing case investigation and contact tracing programs for the first time, so CDPH and Howard Brown Health used their years of expertise in conducting HIV/STI contact tracing to create a rapid and effective onboarding process.

Training tools and resources are presented on the following pages:

1. Sample Training Calendar

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day7
Program Overview Job Role & Expectations ASTHO Training Gender Appropriate Language Training Meet the Team	Set-up systems Watch two (2) past contact tracing forums Johns Hopkins Training	Watch recorded Motivational Interviewing Training Salesforce Training Quarantine/ Isolation Guidance Training Contact Elicitation	Review Referral Process Vaccine Initiative HIPAA Training EMR Training	Document Management Training/ Shadowing Salesforce Calls/ Shadowing/ Mock Interviews	Vaccination Initiative Calls/ Shadowing Salesforce Calls/ Shadowing/ Mock Interviews	Common Challenges & QA Self-Care Webinar

2. List of Required External Trainings
- Contact Tracing Technical Trainings
- Johns Hopkins COVID-19 Contact Tracing
- ASTHO Making Contact: A Training for COVID-19 Contact Tracers
- Foundational Public Health Orientation
- HIPAA, Data Security, and Confidentiality (IDPH training or agency specific)

3. Direct Live and Recorded Trainings
- Salesforce Trainings
- Motivational Interviewing
- Contact Elicitation
- Gender Appropriate Language
- Harm Reduction
- Trauma-Informed Care

4. Contact Tracing Mentoring and Practice Tools
- Recorded Mock Interviews: These were done by experienced contact tracers and were intended to demonstrate to new contact tracers what a successful interview looks like.
- Shadowing Tool: CICT program managers were encouraged to shadow new CICTs during their initial interviews and provide feedback on their successes and areas for growth. Below is a sample of the rubric used for this program. This is a useful tool for structuring mentorship and feedback, and can be easily modified based on the skills you are training. For a template, see **Appendix D3_Shadowing Tool**

Contact Tracer Name	Manager Name	Date of Shadow

Competency	Praise	Areas to Grow	Rating 1 (Doesn't Grasp) – 4 (Nailed It)
Security questions asked -Last Name or DOB if applicable			
Explains privacy of information to patient			
Explains to patient exposure to COVID-19			
Obtains COVID-19 testing information			
Uses gender appropriate language and cultural competency & humility			
Confirms residence			
Obtains work and living settings			
Discusses return to work letter and initiates process if applicable			
Completes symptoms questions and discusses with patient when to seek emergency medical care due to severe symptoms			

Competency	Praise	Areas to Grow	Rating 1 (Doesn't Grasp) – 4 (Nailed It)
Completes vaccination information			
Reviews medical conditions and asks patient when their isolation began			
Reviews virus basics (defining a virus, how COVID-19 is passed, how to protect self and others, who is at highest risk) and breaks down medical terminology (ex: passed vs. transmitted, possible to get the virus from someone who has it vs. exposed, etc.)			
Seeks out referral needs			
Completes any follow up after submitting the survey. Ends call afterwards			
Builds rapport and trust			
Checks in periodically for comprehension and questions			
Checks in periodically for comprehension and questions			
Exudes confidence and compassion			
Provides medically accurate information only; refrains from giving personal advice			
Overall Rating:			

Areas for Growth	Follow-up Needed

5. Self Care and Wellness Resources
Another aspect that was critical to the CICT training/technical assistance program, is self-care and wellness. Throughout this pandemic, we found it vital to prioritize self-care and wellness, since the CICTs were on the front lines of COVID-19 response and had to listen to heartbreaking stories of struggle and loss from their patients and respond to anger and hostility from those who were resistant to COVID-19 prevention measures.

The CICT providers were also impacted by the COVID-19 pandemic within their own personal lives. After discussion with our partner organizations and due to limited clinical capacity, two licensed social workers on the HBH Technical Assistance incorporated a short self-care segment into the weekly CICT meeting and facilitated a weekly virtual self-care drop in space. In these spaces, we facilitate the group by providing attendees with things such as guided meditations, self-care discussions, self-care playlists, and singing bowl meditations.

6. Workforce Development Resources:
One crucial component of the CICT program implementation was workforce development. Workforce development activities included the following:

- General Job Skills Trainings, including:
  - Soft Skills
  - Technical updates
  - Problem solving
  - Microsoft Excel Basics
  - Job Readiness Skills (resume writing, interviewing, etc.)

- Specific Skills Trainings, including:
  - Mental Health First Aid
  - Health Education

- "Day in the Life" Series of panels introducing CICTs to different public health/healthcare careers, including:
  - Community Health Work
  - Benefits Navigation
  - Social Work
  - Disease Intervention Specialist
  - Mental Health/ Behavioral Health
  - Health Education

- Partnership with community college Community Health Worker Certificate program
  - Interested CICTs are able to attend classes with their own unique cohort
  - Program funding covers the cost of their tuition and books
  - Field Placement hours are satisfied by their regular work hours
  - Class time incorporated into their work week

- Job Fair: As CICT work slows down, all current CICT staff are invited to a job fair featuring local public health employers with open job positions.

Processes and Procedures

Role Definition

One of the most basic things to define at the beginning of project implementation is the role of every actor. These role definitions then form the basis of subsequent procedure development, as it they can determine what staff should do when something goes wrong and who should be responsible for carrying out certain activities. As an example, the healthcare facility CICT program categorized the program team into the following roles in the graphic below, and identified common communication channels and patterns.

Chicago Department of Public Health (CDPH)	• Connects directly or indirectly with all teams • Monitors internal CDPH CICT Program, as well as HCFC CICT Program • Collaborates with HBH TA Team to support site TA needs • Advises MTX on software deployment priorities • Supports Program Managers to ensure grant scopes are met
Howard Brown Health Technical Assistance (TA)	• Connects directly or indirectly with all teams • Works directly with CDPH to support sites with technical assistance • Works through CDPH to address any software related concerns • Provides direct support to Program Managers to address programmatic needs • Provides direct support to CICT Staff to support them in providing direct client services
MTX (Software Developer)	• Connects directly or indirectly to all teams • Works primarily with CDPH on platform enhancements • Provided training to HBH TA Team to support training delegate sites • Works to address Help Desk tickets submitted by delegate cites reporting any technical or software related issues
CICT Program Managers	• Connect directly or indirectly with all teams • Work with CDPH to manage program and meet scopes of grant • Work with HBH TA Team to provide support and resources to CICT staff • Provide support and oversight to CICT staff • Work with each other to share best practices and troubleshoot common problems • For smaller sites or during surges, may do direct CICT work
CICT Staff	• Connect directly or indirectly with most teams • Will address most programmatic issues to their Program Managers • Constant contact with HBH TA team through meetings and forums to address direct service needs • Speak directly with patients and clients • Connect with MTX mainly via Help Desk tickets to address technical issues

Standard Operating Procedures

Writing and distributing procedures among staff accomplishes several important things:

- Communicates expectations
- Ensures a consistent experience among program participants/service recipients
- Provides a reference for staff, especially when they are first learning the job
- Can furthers communication, understanding and cohesion among virtual teams

The table below describes some of the core procedures that we implemented for the healthcare facility CICT program.

Procedure Document	Audience	Purpose
Case Investigation and Contact Tracing Scripts	Case Investigators and Contact Tracers (CICTs)	Provided step by step instructions and recommended language for CICTs to use when conducting interviews. Eventually the scripts were integrated into the Salesforce platform, which allowed scripts and data collection to be in the same place.
Temporary Data Collection Tool and Instructions	CICTs, Program Managers	This was created to give CICTs and their managers step by step instructions on how to conduct case investigation and contact tracing interviews and record responses ***before*** the Salesforce platform was completed. This was intended to be used alongside the scripts.
Salesforce User Guides	CICTs, Program Managers	Comprehensive guides were created for each role. They provided step by step instructions on how to navigate every aspect of their job, including checking which cases/contacts they needed to reach out to, how to use the built-in phone system, and how to complete interviews and document data.
sFTP User Instructions	Program Manager	This guide outlined the process for uploading case data into Salesforce.
Wrap around services workflow	CICTs, Program Managers	One of the goals of CICT work is to connect people impacted by COVID-19 to wrap around services and resources. Depending on the capacity of the healthcare facility and the type of resource needed, there were different procedures to follow. This document outlined the process for connecting patients with resources for each situation.

Tools and Job Aids

In order to support consistent implementation of program activities and help the staff responsible for implementing them, the technical assistance team and Chicago Department of Public Health regularly created tools and job aids.

These tools are different from policies and procedures in that they act more as supplemental materials for staff to reference when they encounter a complicated or unusual situation. Such tools are very useful, particularly during public health crisis response, when staff may need to remember a lot of detailed information that changes frequently.

The table below describes some of the tools that were created for the healthcare facility CICT program:

Tool	Audience	Purpose
Help Desk – How to Log a Ticket	Any Salesforce User	This document provided instructions to Salesforce users on how to submit a ticket if they encountered a technical problem with the platform.
Salesforce Data Upload Troubleshooting	Program Managers	This document outlined the most common reasons for data upload failure and steps to resolve the problem.
Salesforce Data Dictionary	Program Managers	This document provided definitions for each of the data fields in Salesforce, which program managers could refer to when creating reports to monitor their team's work.
Glossary of COVID Terms	CICTs	This tool was created for new CICTs for them to reference during interviews in case they forgot specific language or terminology, or a patient used a word they did not know the meaning of.
Return to Work Letter Template	Program Managers	One of the responsibilities of program staff was to provide return to work letters to patients who had completed their isolation and quarantine periods and were safe to return to work. Instead of having each facility create their own letter, we created and distributed one template letter for everyone to use.
Call Disposition Definitions	Any Salesforce User	After every phone call, CICTs were responsible for selecting a "call disposition" to indicate what happened with the call (ex: no answer, wrong number, patient hospitalized). Each disposition triggered different workflows in Salesforce, so this document was designed to help CICTs, and managers remember what would happen for each disposition they select.
Salesforce FAQ	Any Salesforce User	After the first couple of weeks of Salesforce deployment, the technical assistance team compiled a list of the most frequently asked questions and distributed it to all Salesforce Users.
Gender and Sexuality Glossary	CICTs	This document provided a list of gender and sexuality terms and their definitions in order to help CICTs ask demographic questions in an affirming and respectful way.

Change Control Process

Planning a public health emergency response program is an agile and continuous process. In order to implement changes in a structured and systematic way, it is important to implement a change control process. A change control process manages the way changes are implemented during the course of a project. In general, a change control process has 5 steps [16]:

1. Initiation: A change is requested.
2. Assessment: The change is evaluated.
3. Analysis: The change is approved or denied.
4. Implementation: The change is implemented.
5. Closure: The change request is closed.

CDPH and The Howard Brown TA team developed several change control processes, which were each used for different types of change requests. These processes are displayed and summarized in the table below:

Type of Request	Method of Initiation	Change Control Process	Orgs Involved in Change Process
General; idea for improvement; notice a new trend; unsure if a change is needed or refresher training	Email (dedicated technical assistance inbox)	Email received -> Email assessed -> Determine if change is warranted -> Approved or denied -> Implemented if approved/workaround developed if not	Chicago Department of Public Health, Howard Brown Health, and MTX (involved when needed)
Common problem or trend experienced by several different employees	Virtual CICT Forum	Change is requested by CICTs verbally -> Received by HBH TA Team & CDPH Project Officers -> Approved or denied -> If approved, implemented	Chicago Department of Public Health and Howard Brown Health
Specific to site; likely impacts multiple users; may involve PHI; not necessarily technical in nature	1:1 Virtual Site Meeting	Meeting is requested or scheduled -> HBH and CDPH present -> Change is requested -> Analyzed by the teams -> Approved or denied -> If approved, change is implemented	Chicago Department of Public Health and Howard Brown Health
User or site specific; relates to technical specifications of platform; may involve specific case/PHI	Salesforce Ticket	Ticket submitted -> Reviewed by MTX/CDPH -> If approved, change is implemented or issue is resolved	MTX

Once a change is approved, the new processes/procedures must be communicated to all staff. Depending on the scale of the change, new processes were communicated by email, meeting, training, or new tool or job aid.

Some examples of how changes were communicated are summarized in the chart below.

Change	Method(s) of Communication	Purpose
Technical Updates to Salesforce platform	Summary fact sheet, email, announcement during meetings, live and recorded training	Explain the updates to Salesforce and any changes to end-user workflow that they entail
Addition of vaccination history to script	Step by step user guide emailed and posted on website; announced in meetings	Train staff on how to ask new questions and document responses accurately
Change to gender and sexual orientation questions; new goal related to asking demographic questions	Live and recorded training	Train staff on new language and terminology in questions and how to ask demographic questions in an affirming manner
New procedure for documenting patient attendance at large events	Step by step user guide emailed and announced in meetings	Train staff on how to document special events; explain important of this procedure to epidemiological research
Addition of language about COVID therapeutics to script	Live training during meeting	Provide basic understanding of therapeutics and who is eligible; explain what information is and is not within the CICT's authority to convey

Case Study

The implementation process required the most flexibility. Many documents, trainings, and lines of communication were created in order to make program implementation as efficient as possible. We learned early on that we had to streamline communication processes to ensure that we were able to address issues in a timely manner. We also recognized the importance of creating structured spaces that catered to specific staff members to provide appropriate support.

Evaluation throughout the process was necessary, as we realized that certain spaces and forms of communication became less useful over time. We were able to pivot as needed, but it is important to highlight that adaptability is a key function of implementation. There will be times you have to recalibrate your process when you see that something is not functioning as it should, and we recognized this as a best practice to ensure that we were managing time and resources effectively.

Core Elements and Adaptable Characteristics

For each program component, we have considered which elements are absolutely essential to program success and which elements are adaptable based on the context. Organizations considering replication should assess their capacity to implement the core elements of the program, and which adaptable characteristics they should modify to suit the needs of the organization or target population. The following table describes the core elements and adaptable characteristics of the implementation stage of the program.

Program Component	Core Elements	Adaptable Characteristics
Training & Technical Assistance	• Having the staff capacity for the volume of training/technical assistance (TTA) that needs to be provided • Having a system or platform to capture and manage TTA requests • Utilizing internal and external expertise or consultants to meet the needs of staff and managers • Having organizational buy in	• Type of training and technical assistance you provide (i.e. areas of expertise can change and evolve) • Platforms used to provide trainings or e-learning • Channels of communication for internal team and sites
Processes and Procedures	• Processes and procedures offer value by maintaining or advancing program goals • Newly implemented policies, processes, and procedures are based on staff and population need. • New resources or information is equitably communicated across org(s) or site(s) • Have clear role descriptions and responsibilities for teams involved in providing TTA	• Staff responsible for implementing and evaluating processes and procedures • Ability for staff to develop, pivot and maintain workarounds/workflow plans • Processes and procedures are highly adaptable and should cater to organizational desires and needs
Tools and Job Aids	• Language is accessible for audience and information conveyed is clear/concise. • Accessible platform to archive tools and job aids • Promotion of newly implemented best practices or job aids utilizing multiple platforms—i.e. meetings and email	• Content is adaptable and can be updated to suit new information • Format of tools/job aids • Where tools can be accessed
Change Control Process	• Have clear internal methods of communication • Provide platforms and methods of communication for clients to initiate requests and provide TTA	• Workforce development goals and infrastructure/organizational shifts may occur • Types of settings workforce development is offered (i.e. virtual or in person)

Evaluation

Program data came primarily from Salesforce, where all positive cases were uploaded and every client interaction and interview response was documented. This data was evaluated quantitatively for three primary purposes:

- For the CDPH project officers to assess whether sites were on track to meet their goals and adequately performing their scopes of service
- For program managers to assess the productivity of their staff and stay aware of trends in client needs and experiences
- For the Chicago Department of Public Health to have accurate and up to date epidemiological about the COVID-19 pandemic in Chicago

In addition, qualitative data was generated through numerous surveys, meetings, and listening sessions. This data was used both to assess whether sites were performing their additional (non CICT specific) scopes and to inform the technical assistance team about what resources and trainings were needed.

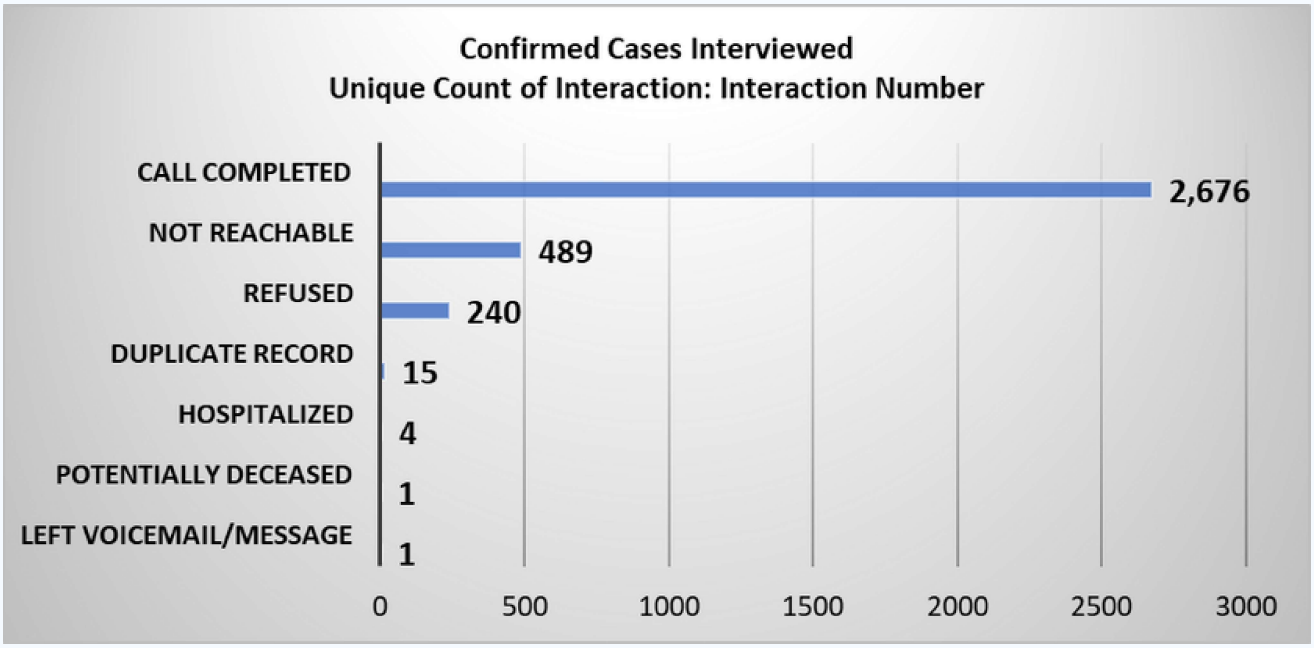
What Was Evaluated

CDPH Scopes

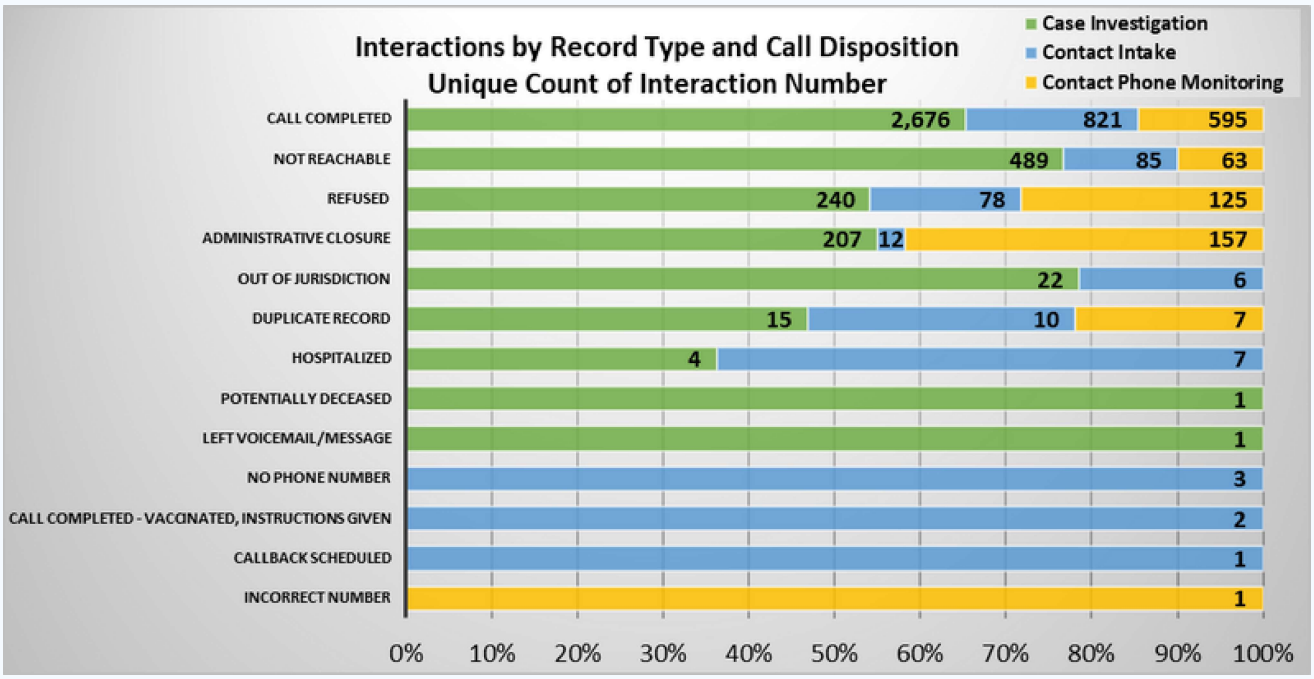
- All case investigation, contact tracing, and contact phone monitoring activities must be documented in Salesforce data system
- All cases uploaded should have conducted a case investigation interview in Salesforce within three (3) working days of being successfully uploaded into the system
- Confirmed COVID-19 cases must be uploaded into Salesforce as soon as possible, and ideally completed within twenty-four (24) hours of receiving test results
- Interviewed at least fifty percent (50%) of confirmed cases within twenty-four (24) hours
- Conduct contact elicitation for one hundred percent (100%) of cases uploaded, with a target contact index of 1.0 (contact index = total number of contacts elicited/total number of cases interviewed)
- Notify all contacts elicited within three (3) working days
- Notify at least fifty percent (50%) of contacts elicited within twenty-four (24) hours
- Ensure ninety percent (90%) completeness of demographic data for interviewed cases in the following categories (gender identity, sexual orientation, race/ethnicity, zip code, birthdate)
- Ensure ninety percent (90%) completeness of demographic data for notified contacts in the following categories (gender identity, sexual orientation, race/ethnicity, zip code, birthdate)

These metrics were measured through Salesforce reports and shared with visual dashboards. The platform also allowed data to be exported for internal organizational reports. CICT program managers had the ability to review customizable dashboards of their individual and team metrics. Data analysts at CDPH also evaluated aggregate data across all sites and throughout the city and would share this information with program managers at monthly meetings. Below are examples of some frequently used Salesforce reports. Each report had the ability to be filtered by site and/or by specific staff member, and by whatever time frame the report runner was interested in.

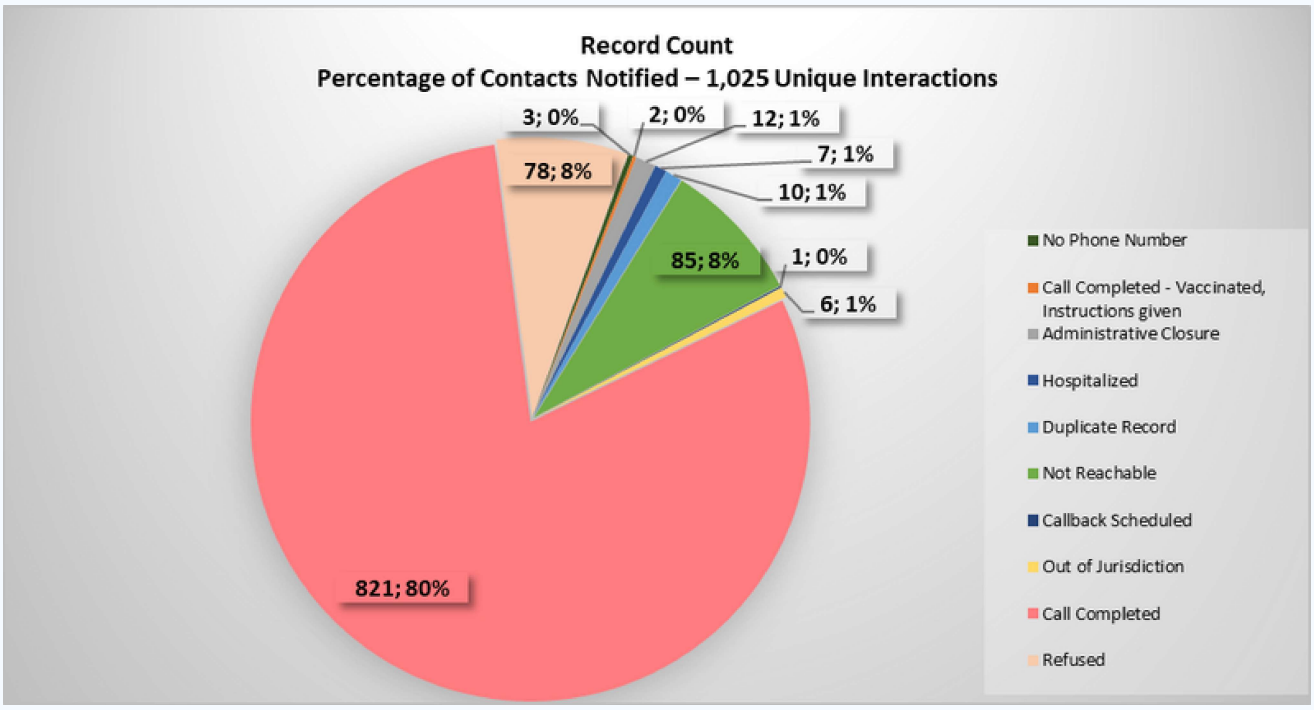
1. Confirmed Cases Interviewed: This report displays every call attempt to complete a case investigation and the call disposition or outcome.



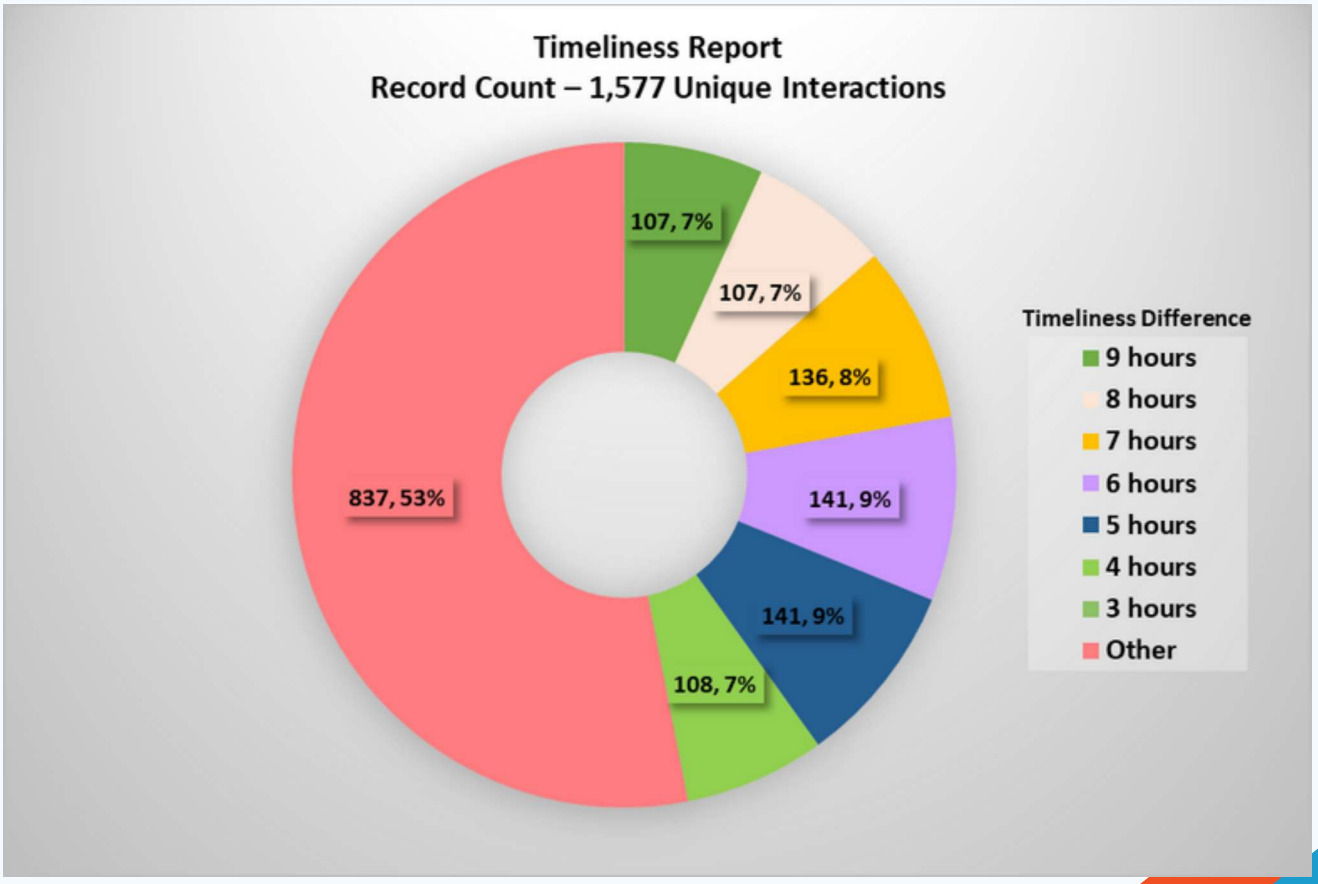
2. Interactions by Record Type and Call Disposition: This report shows a count of every call attempt for every type of interaction, broken down by the call outcome or disposition and the interaction type.



3. Percentage of contacts notified: This pie chart shows both the total number of contacts that were successfully elicited from Case Investigation interviews, as well as what percentage were able to complete a contact intake interview. The goal defined in the program scopes was to notify all contacts elicited from case investigation interviews.



4. Timeliness Report: This report shows the amount of time it took for each case investigation to be completed from the time the case was first uploaded into Salesforce. The goal defined in the program scopes was to complete at least 50% of case investigations within twenty-four (24) hours.



In addition to regularly running reports in Salesforce, each site's progress towards meeting their scopes was documented in regular Site Report Cards, which were prepared and presented to facilities by CDPH project officers. To see an example of a report card, see **Appendix E1_CICT Report Card.** Report cards included the following key metrics (also included demographic data, not shown here):

Table 1 | Case Investigation and Contact Tracing Data between 01/16/2022-04/30/2022

Total cases in SF (n)[1]	Cases successfully interviewed (n)[1,2]	Cases successfully interviewed (%)	Total contacts elicited in SF (n)[1]	Contacts successfully notified (n)[1,2]	Contacts successfully notified (%)	Contact Index[3]
382	236	61.8%	115	100	87.0%	0.5
METRIC GOAL		50.0%	METRIC GOAL		50.0%	1.0

Table 2 | Timeliness of Case Investigation Data between 01/16/2022-04/30/2022

Cases with a contact attempt (n)[1]	Cases with a contact attempt (%)	Cases interviewed within 24 hrs. (n)[1,2,4]	Cases interviewed within 24 hrs. (%)	Cases interviewed within 48 hrs. (n)[1,2,4]	Cases interviewed within 48 hrs. (%)
305	79.8%	211	55.2%	226	59.2%
METRIC GOAL			50.0%		

Table 3 | Timeliness of Contact Notification Data between 01/16/2022-04/30/2022

Contacts with a contact attempt (n)[1]	Contacts with a contact attempt (%)	Contacts notified within 24 hrs. (n)[1,2,4]	Contacts notified within 24 hrs. (%)	Cases notified within 48 hrs. (n)[1,2,4]	Contacts notified within 48 hrs. (%)
115	100%	97	84.3%	97	84.3%
METRIC GOAL			50.0%		

Additional Scopes of Work

The rationale for implementing additional scopes of work was two-fold. CICT work required less time and/or workforce hours when COVID-19 cases were lower, and the CICT staff was highly trained and able to provide support to other initiatives or programs impacted by the COVID-19 pandemic. These additional scopes became the priority when cases/call volumes were low but provided flexibility in the event of a surge requiring CICTs to resume case investigation/contact tracing.

Additional scopes were determined on a site-by-site basis, with variables including capacity, areas of interest, and community members most impacted by the COVID-19 pandemic. Specific areas of interest included: chronic disease management, mental health, linkage to care, community education, and long-term implications of COVID-19.

Some of the ways that quantitative data from Salesforce was used to evaluate additional scopes work included looking at:

- Total number of connections/interactions and enrollment in care (including but not limited to primary care and behavioral health).
- Total number of insurance enrollment and navigation interactions.
- Total amount of re-engagement in care interactions (including but not limited to chronic disease-impacted populations).
- Total number of care/case navigation and community health work interactions.
- Total number of linkage and connection with wrap around services interactions.
- Total number of COVID-19 and/or flu vaccine enrollment/registration interactions

Additional scopes of work were evaluated qualitatively through a series of meetings between CDPH and the healthcare facility program managers. Through these meetings, CDPH was able to learn about the specific work each site was doing, which included:

- Education and Outreach was a large portion of the additional scopes work for the CICTs. For example, when there was not a surge or a large caseload, delegate agencies worked on additional tasks beyond CICT work. Some of those things included: Diabetes education, health education, and hypertension topics.
- Linkage To Care interactions were vital to reconnecting people who might have fallen out of medical care and need some assistance navigating that.
- Insurance Enrollment and Navigation was also another piece of the CICTs work. This once again speaks to the flexibility of the CICTs and their skill sets; cross training staff to ensure a holistic approach is being present.
- Community Health Worker interactions were also some of the additional scopes the delegate agencies were doing. For example, one site pivoted and leveraged their CICTs to make, deliver, and supply families in their surrounding communities with fresh food baskets. Sometimes that CHW work looked like supporting a diabetes workshop their site has put together.
- Wrap Around Services was another aspect that was considered for the CICTs to tackle. This might have looked like CICTs connecting some dots with a case and really understanding the case as a whole person, not just someone who has tested positive for COVID. If a case might have mentioned they are experiencing a high level of stress and anxiety, they might mention something about behavioral health services their delegate agency might have to offer.

Education and Outreach

Education and outreach efforts were assessed to identify impact on communities being served. Sites planned to measure the efficacy of education and outreach by looking at the total number of resource navigation interactions. The role of a resource navigator is to educate community members on what resources are available, what they might be eligible for, and how to access these resources. This allowed staff to learn how well-informed community members were.

Another area of interest was looking into the total number of community and home-based outreach interactions. We know that we must meet community members where they are, and sometimes that means conducting work in communities. Providing home-based options for those that might be persons with disabilities, have some hesitancy, and/or are vulnerable to COVID-19 are other ways to meet community need. Understanding community and home-based interactions will help teams understand the community needs are, at what community members are most in need of home-based interactions.

Finally, looking at the total number of educational campaigns conducted will help determine if educational efforts are being applied to the appropriate communities, and will help determine whether or not additional educational campaigns are needed to respond to COVID-19 in these communities.

Technical Assistance Feedback

Throughout the program, the Technical Assistance team created several surveys, as well as regular meeting spaces to elicit feedback on tools and resources needed and the effectiveness of existing Technical Assistance activities.

- Weekly CICT Forum: This meeting was created for CICTs to discuss best practices of their work, discuss successes and challenges of their work, and to get input/feedback from their colleagues. This information was used to the create of trainings, implement workflow changes, and the create support documents to make the work more manageable and sustainable.
- Bi-Weekly Manager Meetings: These spaces were created to provide updates and support to program managers and elicit feedback that would help support the work being done. This led to the creation of trainings, implementing workflow changes, and creating support documents with the goal being to make the work more manageable and sustainable.
- Learning Collaborative Feedback Survey
- CICT Support Group Interest Survey
- Health Educator Training Interest Survey
- Mental Health First Aid Training Interest Survey
- Contact Tracing Forum Feedback Survey (shown below)

1. Please rate to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I consider the Contact Tracing Forum to be a good use of my time					
I feel like I am able to get my questions answered					
The topics discussed are helpful to me					
The forum has a good structure					
I would like more time devoted to presentations on various topics					
I would like the forum to include breakout rooms for small group discussions					

2. Please tell us about other topics you would like to discuss at the weekly Contact Tracing Forum

3. Please tell us any other suggestions you have for improving the weekly Contact Tracing Forum

How Evaluation Results Were Used

Our program continually used evaluation results to improve and modify our expectations, scopes, and priorities.

Changing Expectations
Regular evaluation of program data helped all staff manage expectations about what could realistically be accomplished and learned from our work. For example, monitoring the number of interactions, percentage of interactions completed, and timeliness helped program managers set expectations for what CICT staff should be able to accomplish. We also learned that the analytic capabilities built into Salesforce itself were somewhat limited, so program managers had to change their expectations about what they could learn from the Salesforce data. Instead, epidemiologists at CDPH and at at least one of the delegate agencies, opted to export data from Salesforce and use a separate data analysis software.

Changing Scopes
Another area of focus that informed by program evaluation was how the scopes shifted. The intention was originally for staff to focus exclusively on CICT work, but by monitoring the data, we recognized that the number of cases surged and waned over time. When cases and call volumes decreased, there was less COVID-specific work to be done. This led to the inclusion of additional scopes. These scopes were added to use the trained CICT staff in other roles. This was done with the expectation that if there were a surge in cases that the staff would be able to return to CICT work. Another example of how evaluation of data changed scopes was the increased emphasis on demographic data collection in the second year of the program. We noticed that many interviews were being completed without the demographics questions, which limited the ability of city epidemiologists to monitor how COVID was impacting different communities. In order to address this, we improved the wording of the questions, provided training to CICT staff on the importance of asking these questions and how to do so in an affirming way, and created a new scope to ensure 90% completeness of demographic data.

Changing Priorities
Finally, as the ongoing evaluation of the program continued there was a shift in priorities. One example of this is when vaccinations became more readily available. Initially the priority was focused on those who were testing positive for COVID-19 and ensuring that they were aware of their status and to obtain any possible contacts and their information. Once vaccinations became available, we received feedback from the CICTs that people were eager for information about vaccines, and also that we needed a way to document when cases and contacts had been vaccinated. This eventually led to the program prioritizing vaccine outreach and education more.

Case Study
Evaluation is a constant part of any program or intervention. Some processes will work better than others, and regular program evaluation will ensure that the program or intervention is working the way it was intended to.

For our process, we recognized that we had to deal with changing expectations, changing scopes, and changing priorities. Some of these were easier to navigate than others. For example, it was difficult to manage the expectations that CICT staff had for the platform. It was not easy to modify the platform quickly, and sites felt that there might be better ways for the platform to function. While all of that may have been true, the reality is that the platform was not quick or easy to modify, so many of the suggested platform changes were not realistic or practical.

Over time the priorities and scopes of the program began to change. We had to pivot to focus less on contact tracing work when COVID-19 cases began to decline. This meant that we had to figure out ways to use staff in a way that would allow them to be productive and work on other projects, but also have the flexibility in case there was a surge of COVID-19 cases so that the staff could resume contact tracing. Consistently evaluating the program allowed us to improve our program because we were able to adjust to what our communities needed, and it gave us the opportunity to know how the program could be implemented for use in other environments.

Core Elements and Adaptable Characteristics

For each program component, we have considered which elements are absolutely essential to program success and which elements are adaptable based on the context. Organizations considering replication should assess their capacity to implement the core elements of the program, and which adaptable characteristics they should modify to suit the needs of the organization or target population. The following table describes the core elements and adaptable characteristics of the evaluation stage of the program.

Program Components	Core Elements	Adaptable Characteristics

Qualitative Feedback	• Regular meetings and check-ins are a vital component to ensure that the organization and staff are aligned in doing the work.	• Getting qualitative feedback can be accomplished in several different ways:
		  ○ Regular meetings for all program staff
		  ○ Regular meetings separated by role
		  ○ Dedicated feedback or listening sessions on specific topics
		  ○ Surveys with options for free text responses

Quantitative Data	• Since time is of the essence during a public health emergency, you should design a system in which data is collected as close to real time as possible.
	• Data should be easily accessible to program managers so they can adequately monitor their staff and if they are meeting program goals
	• Depending on the nature of of the public health emergency, data may need to be easily reportable to local and state departments of public health
		• Our program was able to use Salesforce, which allows for essentially real-time analysis of data as it is collected. Before using Salesforce, several sites used a secure online spreadsheet program to achieve a similar outcome. If this is not an option for you, your program could alternatively require staff to report their data on a daily basis via a secure internal folder.
		• Individual sites may or may not have data analysis expertise, but regardless, evaluation results should be readily available to program managers and staff. This can be accomplished in a number of ways:
		  ○ Utilizing a user friendly system like Salesforce that allows for the creation of reports and graphs without much analytical knowledge
		  ○ Employing a separate data analysis expert to create reports for dissemination to program staff
		  ○ A combination of both
		• While not strictly necessary, we found it useful to occassionally distribute surveys to program staff to assess:
		  ○ Gaps in knowledge they might have
		  ○ Resources they may need
		  ○ Common challenges experienced by staff
		  ○ Priorities for our training and technical assistance efforts

Dissemination of Best Practices

Purpose of Dissemination

Before assessing the most impactful approach to disseminate best practices, it is important to consider the purpose of disseminating information in a given community. Dissemination is a primary way to validate the overall vision and purpose of your program and can be used to establish the criteria used to measure success at various stages of the implementation process. Finally, it can also be used to improve the methods and structure used to support the dissemination of your work.

There are multiple reasons why organizations might decide to disseminate information. These reasons include:

- **Educate and Promote Awareness:** Information is often disseminated in order to educate, explain, or promote a concept or process. For example, trainings used to explain platform navigation, instructions for alternative procedures when there are technical difficulties, and guidelines created and implemented to ensure workflow consistency are some ways that information is disseminated to encourage participants to follow policies and procedures intended to improve organizational quality improvement.
- **Feedback and Input:** Sometimes information is disseminated in hopes of eliciting feedback. This feedback may require further information to be collected or be used to validate some other process. Examples include things like needs assessments, questionnaires, surveys, or frequently asked question lists. This feedback can be used to improve your process at various stages of your program based on when they are used.
- **Improve Current Practices and Improve Future Practices:** Information is often disseminated to improve an organization's knowledge base, and subsequently make better decisions when implementing future programming. For example, a program manager might need to choose implementing one programmatic intervention over another yet learns after seeing the first intervention implemented several times that it is not as cost effective as the second intervention. Provided all other things are equal (program success, ease of implementation, organizational buy-in) the program manager should be more inclined to choose the second type of intervention, because it can lower the cost for the organization and possibly the community being served.
- **Collaboration:** Information is often disseminated to share knowledge and create new networks of communication that could lead to collaboration between organizations that share a similar goal. Examples include creating workflow to support the flow of information between organizations working towards a common purpose, listservs where like-minded individuals can discuss common issues and share ideas, and toolkit libraries where people can access resources.
- **Other Considerations:** Another consideration is the rapidly changing user expectations and technology. This impacts the purposes and systems that are used, as well as how we are able to access of information as our needs will almost certainly change over time. This includes the ways that information is managed and disseminated, and how it is accessed and consumed by the intended audience.

It is clear that the way information is provided can influence and impact the way the intended audience might do their work. Input and feedback from the intended audience can also affect the creators/suppliers of the information and influence improvements moving forward.

For our purposes, the main goal of disseminating our best practices was so the tools and resources created during this program could be used to inform the work as it was being done by sites and their CICT staff, as well as to provide insight on how these tools could be used if a similar response to a public health crisis is needed. Tools and resources were provided to sites and CICT staff through a variety of means.

Dissemination Platforms

Multiple platforms were used, with a focus of creating spaces, resources, and trainings for specific team members. It is important to note that the chosen case management software/platform is one of the most adaptable, if not the most adaptable, element of program implementation. There are many case management platforms that are able to provide the core elements that are necessary to ensure that your program functions effectively. However, it is important to find one that meets your agency's tracking, reporting, and communication needs. Another important consideration is while features are very important to consider when deciding which system to choose, there are many of other variables to consider, such as:

- Does the provider offer quality, ongoing support?
- Is it easy to retrieve and report on the data you collect?
- Can the system be configured to fit your organization's unique needs?
- Can you make minor system changes without having to go through the provider?
- Can the software (and the provider) grow and adapt with your organization?

Each platform was used for a very specific purpose, and all platforms were connected to each other. Below is a breakdown of the platforms that were used, the intended audience, and their function.

Platform	Audience	Explanation
Salesforce	CICTs and Program Manager	Salesforce was used by different staff for different purposes. CICTs used Salesforce to contact cases and contacts, conduct interviews, and save information collected during the interview. Managers used Salesforce for data collection and management purposes, and to create reports and dashboards for data visualization.
MuleSoft Secure File Transfer Protocol (sFTP)	Data Managers/any staff that managed site data upload process	The MuleSoft sFTP is the data transfer portal that was used to take cases that were pulled from reports from sites' Electronic Medical Records (EMR) to place into the Salesforce platform.
Twilio	Anyone completing case investigation and contact tracing calls, typically CICTs and managers at smaller FQHCs	Twilio is an app that was integrated into Salesforce that acted as the phone used to complete interviews. It also was used to track when interactions were completed, and all of the time variables for completing the interaction.
Okta	Anyone who needed access to Salesforce	Okta was the secure multifactor login used to ensure appropriate access, as Salesforce houses protected health information (PHI).
Howard Brown Technical Assistance Website	CICTs, Managers, TA Partners	This site was created to house and archive the various trainings and documents that were created during the program for easy site access. There was also a discussion board that was created, and an events calendar with all upcoming meetings and Zoom links.

Trainings

Trainings were created to support the work being done by sites and their CICT staff. This was one of the primary methods of disseminating new materials and resources to program managers and CICTs. Trainings were both created based on programmatic needs as well as based on input from program managers and CICTs. Trainings were also delivered based on specific skills and resources needed to successfully complete their work-related tasks. Below is a breakdown of the various trainings that were provided, the intended audience, and the purpose of the training.

Trainings	Audience	Explanation
Salesforce Trainings	CICTs and Program Managers	Live and recorded trainings were created to assist users in platform navigation, script navigation for completing interactions, and overall platform use.
Reports and Dashboards Trainings	Program Managers	These trainings were designed to assist program managers with creating reports in Salesforce to collect the data that needed to be captured for grant and site purposes, and to be able to provide visual representations of their data.
MuleSoft Training	Data Managers/any staff that managed site data upload process	These trainings were created to ensure that sites understood the proper process for formatting and uploading the cases they gathered from their EMR reports so they would populate into Salesforce.
Job Skills Trainings	CICTs	Various job skills trainings were provided to CICTs in order to enhance skills that they already possess, as well as to teach new skills that would benefit current and future work. Skills trainings the were provided were: Soft Skills, Excel, Applying for Financial Aid, Job Search/Readiness, Mental Health First Aid, and HIV Screening and Counseling/Health Education.
Supplemental Trainings	CICTs and Program Managers	The Technical Assistance Team put together several trainings that were aimed at providing staff with additional tools and resources. These trainings were: Motivational Interviewing, Gender Appropriate Language, Sexual Orientation and Gender Identity Data Collection, and the LGBTQ Care Series.

Panel Discussions

The creation of the "Day in the Life" panel discussion series was based on the feedback from thr CICTs. There was an informal assessment done to determine what healthcare related fields CICTs were interested in, and with those findings these panel discussions were created to inform CICTs about the various roles in healthcare they had identified. These sessions were held monthly, and each focused on a different field of work. Staff were invited to share their expertise with CICTs, and to answer any questions. Below is a table listing the panel discussions that were held, the intended audience, and what was being discussed in those spaces.

Panel Discussions	Audience	Explanation
Community Health Work (CHW)	CICTs	Community Health Workers from various environments and in various roles were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.
Benefits Navigation	CICTs	Benefit Navigators from HBH and Broadway Youth Center (BYC) were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.
Social Work	CICTs	Social Workers in various roles at HBH were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.
Disease Intervention Specialist (DIS)	CICTs	DISs working in various environments and in various roles were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.
Mental Health/Behavioral Health	CICTs	Mental health providers working in various environments and in various roles were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.
Health Education	CICTs	Health educators working in various environments and in various roles were invited to speak to CICTs to discuss their work, employment options in the field, and how to enter the field.

Meetings

Meetings were created intentionally for multiple purposes, and with specific audiences and optimal platforms in mind. There was intention behind creating spaces specifically for CICTs, program managers, and data managers as all had different needs, needed different supports, and required specific information to successfully do their work. There was also the need to pivot meetings as priorities shifted, and it was essential to have regular touchpoints in place to support sites and their staff, especially for teams working remotely. Below is a breakdown of the meetings that were created, the intended audience, and what these spaces were used to accomplish.

Meetings	Audience	Explanation
CICT Forum	CICTs	This space was created specifically to provide support for CICTs providing direct services to patients. This was done by sharing best practices, successes, challenges, providing self-care, and providing a space for CICTs to learn from each other.
Manager Meetings	Program Managers	This space was created to provide support for CICT Program Managers. This was done by sharing best practices, providing programmatic updates, and providing resources.
Learning Collaborative	Program Managers	This space was created to share best practices and facilitate idea sharing among sites. Internal and external content experts were invited to share their expertise and answer questions specific to their areas of expertise. Content is based on site and programmatic needs. Topics for the Learning Collaborative included: Data Collection and Epidemiology, Medical Racism, Grants Management, Additional Scopes, etc.
Site Check-Ins	Program Managers	These meetings were created to provide regular touchpoints with individual sites. The goal was to be more proactive and to have more intentional and consistent contact with program managers so that we would be aware of any questions and concerns their sites may have and assist them, so they were better equipped to address them.
Self-Care Drop-In	CICTs	This space was created to provide additional support to CICTs, specifically around tending to self-care needs.
As Needed Meetings	Program Managers and CICTs	There were often one-off meetings that were needed to provide information or updates, to orient new team members at sites, and to answer questions that sites had around various topics.

Next Steps

Moving forward; the plan is to disseminate findings externally through this toolkit as well as abstract submission, poster discussions, manuscript development, and panel presentations at conferences.

Case Study

Dissemination is generally the culmination of many programs and interventions to share the work that has been accomplished. There are multiple ways to disseminate your findings and they should be tailored to the needs of your audience and must be easily accessible based on the intended audience's preferred method of information consumption.

During our program we disseminated our tools and resources that were created directly to the CICT staff. This was done primarily over virtual meetings and trainings. This was the preferred method of or staff, and it was also the most accessible as we were working with 27 sites across the city of Chicago.

The eventual goal is to disseminate program findings at conferences and through published papers. This would allow us to reach a much broader audience, and by being able to share our findings with a larger audience; we will hopefully be able to contribute to improving current best practices.

Core Elements and Adaptable Characteristics

For each program component, we have considered which elements are absolutely essential to program success and which elements are adaptable based on the context. Organizations considering replication should assess their capacity to implement the core elements of the program, and which adaptable characteristics they should modify to suit the needs of the organization or target population. The following table describes the core elements and adaptable characteristics of the evaluation stage of the program.

Program Component	Core Element	Adaptable Characterisitc
App/Platform	• App/Platform should have the ability to support data collection and management, or have the option to export data to be managed outside of the platform • App/Platform should have the ability to run reports to be used for quantitative purposes, or have the option to export data to run reports outside of the platform • App/Platform needs to be HIPAA compliant to ensure the safety of PHI	Any app or platform with the core features can be implemented

Trainings	• Trainings are required to ensure that staff are well prepared to do the work
	• These trainings should include:
	  ○ Platform training to ensure proper navigation and use of the platform being used
	  ○ Job skills trainings that are catered specifically to the staff skill level, and those that enhance skills needed to best perform the work
	  ○ Supplemental trainings are needed to provide any additional skills and/or resources that staff may need to best perform the work
		While trainings are required to ensure best practices, the types of trainings provided should be adapted to best serve your organization, staff, and community

Panel Discussions	• Panel discussions were used to provide staff with exposure to different fields in healthcare, but these panels can be adapted to the needs of the organization and staff	Panel discussions are highly adaptable, and should be catered to meet the needs of the organization and staff

Meetings	• Regular meetings and check-ins are a vital component to ensure that the organization and staff are aligned in doing the work
	• There are various meeting types to consider, such as:
	  ○ Staff meetings and check-ins to ensure that best practices are continuously being used, and that staff are supported in the work being completed
	  ○ Learning Collaborative meetings can be beneficial for sharing high level programmatic information and data amongst managers, and to share best practices
	  ○ Forum meetings are valuable spaces designated for direct service staff only, to have a place to discuss challenges and stressors among team members providing program implementation
		While regular meetings and check-ins are essential to provide support to staff, they must be highly adaptable, and should focus on the unique needs of the organization and staff

Lessons Learned

There were many lessons learned over the course of this project. The domains that we focused on were Team Management, Scope Management, Time Management, Resource Management, and Communication Management.

Team Management

As mentioned in several sections of this toolkit; a major lesson learned was the importance of flexibility. Whether navigating a new program, adopting a new software platform, or collaborating with partners, being flexible made our work infinitely easier helped reduce stress.

We also learned the importance of establishing ground rules and expectations. This helped keep processes consistent with the goals of the program. We had regular meetings to maintain consistency but were also able to adjust. As discussed, expectations can and do change, so having those ground rules and being able to adapt ensured a greater level of continuity.

Lastly, we learned the importance of collaboration. A project like this required constant collaboration with many partners. We worked with CDPH and 27 delegate agencies, and also had support from three partner organizations that supported our technical assistance work. In order to make the biggest possible impact we need to emphasize collaboration with our community partners and members.

Scope Management

Managing program scopes can be challenging. As the technical assistance partner, we observed the differences between the way sites did the work. Smaller sites had smaller staffs, and therefore had less capacity to do the work. It is beneficial for sites to analyze their capacity for new projects. This program may be an outlier, as it is the first time in many of our lives that we experienced a global pandemic. The fact remains that internal processes should be in place to ensure that the work can be done, and that there is enough staffing/resources available to do the work effectively.

We also learned that it is critical to be proactive whenever possible. Being able to create solutions in case an issue arises ***before*** it arises helps staff burden, and limits disruptions to workflows. We know that workflows are important to ensure clinical efficacy, so being proactive helps support programs and staff.

Lastly, we learned what could happen when there is a delay in delivering scopes. This program was unique in that it was created to address a pandemic during the pandemic. We have not had many experiences like this, so it shifted the way many entities functioned. A good example was the grant approval process. Because we have not seen many global pandemics in our lifetime, the process for creating and approving grant funding was different. This led to some inconsistent messaging, delays in services, and loss of staff. This was unfortunately unavoidable, but it shows that there has to be a proper plan in place for organizations that want to do similar work, and a contingency plan in case processes take longer than expected.

Time Management

There were conscious efforts made to ensure that the project remained on the timeline, but as we've seen changes in expectations, scopes, and priorities; it was natural to adapt the timeline to meet the needs of the project. We learned that time management was a fluid process, and we often needed to adapt. This meant that we often needed to reschedule meetings, change the topic of a learning collaborative, or offer additional impromptu trainings, and because our timeline was based on the workplan provided by CDPH; we met their time management expectations.

Resource Management

The process of resource management varied from site to site. There was intention by CDPH to partner with organizations and to have them hire community members to help serve communities. This ensured there was adequate stakeholder representation. One lesson that we learned in this process was that there could have been more resources created in multiple languages. Many staff and community members were multilingual, so this would have lessened gaps in information delivery.

We also learned how challenging it is to accurately estimate needed resources. Each site served a different community, had different community needs, and varied staffing levels. This once again highlights the importance of understanding organizational capacity, as it impacts how effectively resources can be provided to the community.

Lastly, there were several resources created to support the delegate agencies that turned out not to be as useful as we hoped. A website was created to archive documents and trainings and provide CICTs with a discussion board that was to be used to network and problem solve. The site was not visited as much as we hoped. Google Drive was also used to house resources, and while it was useful internally; we found that some delegate agencies could not access the resources because Google was blocked by their internal online security systems.

Communication Management

When having to support 27 delegate agencies, follow workplans from CDPH, and managing partner organization support; we learned the importance of streamlined communication very quickly. We created multiple forms of communication: specified email, targeted meetings for a specific topic or purpose, team meetings to address site specific concerns, individual meetings, and website chats.
We created a specific email address that was accessed by the TA team to address site concerns. These concerns were documented in a Smartsheet to keep track of the issue and how/if it was resolved. This was helpful as we could see how the issue was addressed and if follow-up was needed. Having a way to monitor communication helps streamline processes in the future.

We learned that some meetings needed to be phased out as they were no longer a good use of time and resources, and others needed to be rescheduled to more reasonable times. The key was to elicit feedback from CICTs and program managers to create/provide meetings that worked best for them.

The HBTA website provided an opportunity for valuable learning experiences. We learned that it is not always helpful to have a separate site requiring yet another account and login. We also learned that many new staff used the site to access documents, but very few utilized discussion boards. This helped us focus how the website was used and illuminated management strategies for developing similar platforms in the future.

Conclusion

The past two years have shown a lot of the strengths and flaws of the public health system. While no program is perfect, COVID-19 challenged the limits of systems and also provided opportunities for remarkable work to be done. What we learned throughout this process will provide knowledge and best practices to hospitals and FQHCs for responding to future public health emergencies. We hope that you are able to use the information we have provided in this toolkit to expand, adapt, and implement similar interventions in your communities.

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Howard Brown Health

DEVELOPING A PROGRAM TO RESPOND TO PUBLIC HEALTH PRIORITIES: APPENDICES

Appendix A1: Emergency Public Health Response

Essential Public Health Service	Emergency Public Health[1]	Ordinary Public Health[2]
Assess and monitor population health	• Determine who is impacted by the emergency • Monitor how many people are impacted and assess trends	• Engage in continuous monitoring and data analysis using a variety of technologies and platforms • Use data to determine root causes of health disparities • Work with community to assess health status, needs, and assets
Diagnose and investigate health problems	• Investigate how people can prevent being affected and/or optimize their health outcomes • Investigate the causes of the emergency in order to prevent similar situations in the future • Verify that laboratories to be used during response are operational and assess their capacity • Stay apprised of new diagnostic technology	• Anticipate, prevent, or mitigate emerging health issues • Use public health laboratories to conduct rapid and high-volume testing of infection diseases • Monitor real time health status and identify patterns • Analyze patterns to determine root causes of health issues
Communicate effectively to inform and educate	• All of the same responsibilities as during ordinary times • Can be more difficult during an emergency due to the urgency, rampant misinformation, fear among community members, and disruption to communication channels • Information, lots of uncertainty. Messaging must be regularly updated.	• Develop and disseminate accessible and cultural and linguistically appropriate health information • Ensure two-way communication between agency and populations served • Deliver information to the right audiences via the appropriate channels • Communicate with necessary timeliness
Strengthen, support, and mobilize community partnerships	• Crucial step in rapid scale up of the response in impacted communities • Must be accomplished very quickly. • Can be mobilized to stay apprised of the changing situation, disseminate	• Facilitate relationships across different sectors that influence health • Engage with community members and organizations to develop public health solutions • Focus on strengths-based relationships

[1] All information in this column comes from Centers for Disease Control and Prevention (2011). Public Health Emergency Response Guide for State, Local, and Tribal Public Health Directors, Version 2.0.

[2] All information in this column comes from Centers for Disease Control and Prevention (2020). The 10 Essential public health services to protect and promote the health of all people in all communities. *National Public Health Performance Standards Program.*

	information, develop community-based solutions, and create a referral network for needed resources	
Create, champion, and implement policies, plans, and laws	• Must stay apprised of legal issues, emergency mandates, etc. • Must stay apprised of new agency level procedures as the situation changes • May require emergency amendments to policies, plans, and laws to appropriately respond	• Develop and support policies, plans, and laws that impact the practice of public health, influence health, or address historical injustices • Collaborate with community partners to develop and support policies and community health plans • Ensure that policies, plans, and laws provide fair and just opportunities for all people to be healthy
Utilize legal and regulatory actions	• All responsibilities as during ordinary times • May become more of a priority during an emergency because: • Restrictive measures such as limited movement, quarantine and PPE requirements may be implemented • May need to be rapidly increased and deployed • New vaccines, testing technology, and treatments may be rapidly developed • Healthcare workforce may need to be quickly increased	• Ensure that laws are enforced equitably • Conduct enforcement activities, including food safety and water quality • Review and approve new medical diagnostic technologies and treatments • License and monitor quality of healthcare (including labs, hospitals, nursing homes) • License and credential healthcare workforce • Consider health implications of laws from other sectors
Enable equitable access	• Must expand or develop modalities, such as a hotline, for the public to access information and linkage to care and resources	• Connect people to healthcare, mental health, and social services • Identify gaps in services • Address and remove barriers to care
Build a diverse and skilled workforce	• May need to rapidly train individuals with the skills needed to address the situation. • Need to plan for eventual disengagement or transitions in crisis response, so cross-training staff in other skills is also necessary.	• Provide education and training • Ensure that workforce reflects the communities they serve and practice cultural humility • Assess if the size of the workforce is appropriate for the need they serve • Foster partnerships with academic and other educational institutions • Develop a pipeline of future public health leaders
Improve and innovate through	• Must immediately consider the needs of vulnerable populations including people who are	• Bridge public health research and practice • Make evidence-based decisions

evaluation, research, and quality improvement	homebound, medically complicated, have limited English proficiency, etc. • Evaluation may lead to immediate changes in operations • Evaluation metrics, systems for data capture, and procedures may change rapidly as priorities shift. • Must document all activities for evaluation purposes	• Continuously evaluate new services, policies and plans to ensure they promote health and do not cause harm • Involve the community in all stages of research
Build and maintain a strong organizational infrastructure for public health	• Maintain understanding of the role each part of your local public health infrastructure is playing to avoid duplicating efforts • Some critical infrastructures may be impacted • Organizational infrastructures may need to work together in new ways to ensure equitable distribution of resources and services • Organizations may take on new roles that are typically only done by other parts of the broader public health infrastructure • Recognize mistakes may be made and ongoing learning and adjustments are paramount	• Develop and maintain understanding of the broader organizational infrastructures that support the public health system in a particular jurisdiction • Ensure that resources are appropriate, needed, and distributed equitably • Manage financial and human resources effectively • Employ strategic planning and communication • Utilize current information technology services that meet all privacy and security standards

References:

1. Centers for Disease Control and Prevention (2011). Public Health Emergency Response Guide for State, Local, and Tribal Public Health Directors, Version 2.0.
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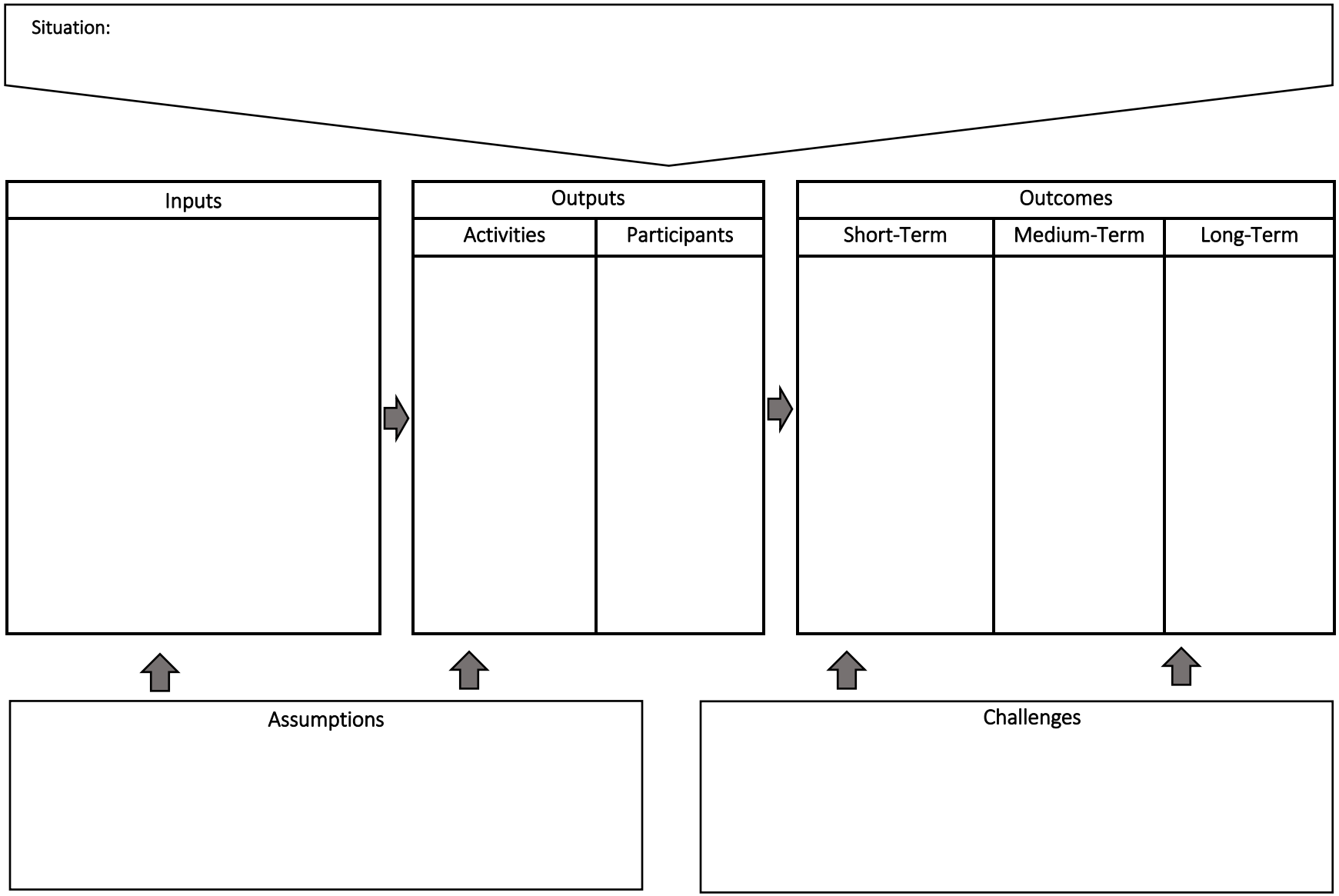
Appendix B1_Prioritization Matrix

Criteria	Weight (1-5)	Score (1-5)	Total
Criterion 1			0
Criterion 2			0
Criterion 3			0
Criterion 4			0
Criterion 5			0
Total Score			0

Appendix C1: SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis

	HELPFUL	***HARMFUL***
INTERNAL	**Strengths**	**Weaknesses**
EXTERNAL	**Opportunities**	**Threats**

Appendix C2_Logic Model



Appendix B4_Budget

Project Name

Expense Type	Description			% of Budget	YTD	Remaining
Personnel						
Title	Name	Salary	% Allocation	Cost	--	--
Total Salary						
Fringe						
Benefit Type			Rate (%)	Cost	--	--
Total Fringe						
Travel						
Type	Description			Cost	--	--
Total Travel						
Supplies						
Type	Description	Unit Cost	Quantity	Cost	--	--
Total Supplies						
Contractual						
Temp staff						
Total Contractual						
Total Direct Charges						
Indirect Costs on Non-Contractual						
		Total Direct Non-Contractual	Rate (%)	Cost	--	--

Total Indirect Charges					
Total					

Appendix C4: Contact Tracing FTE Calculator Tool

The first model takes into account total COVID-19 screenings and indexes. The second model will calculate by the number of screenings in the last (4) weeks. These numbers both can be used to guage your necessary FTE needs. If you working towards expanding your screening capacity, it would be ideal to settle somewhere closer to the FTE number in the first model.

Contact Tracing FTE Calculator Tool

	Number of COVID-19 Screenings	Number of Positive Tests(indexes)	Positivity Rate	Number of Weeks you have been conducting COVID-19 Screening	Estimated Number of contacts elicited for # of indexes*	Number of FTE's Needed**
Example	1000	100	=C7/B7	5	=C7*1.5	=(C7/E7)/20
			=C8/B8		=C8*1.5	=(C8/E8)/20
			=C9/B9		=C9*1.5	=(C9/E9)/20
			=C10/B10		=C10*1.5	=(C10/E10)/20

Directions - Enter the Number of COVID-19 Screenings, the Number of Positive Tests(indexes), and the number of weeks you have been conducting COVID Screening

Last (4) Weeks Contact Tracing FTE Calculator Tool

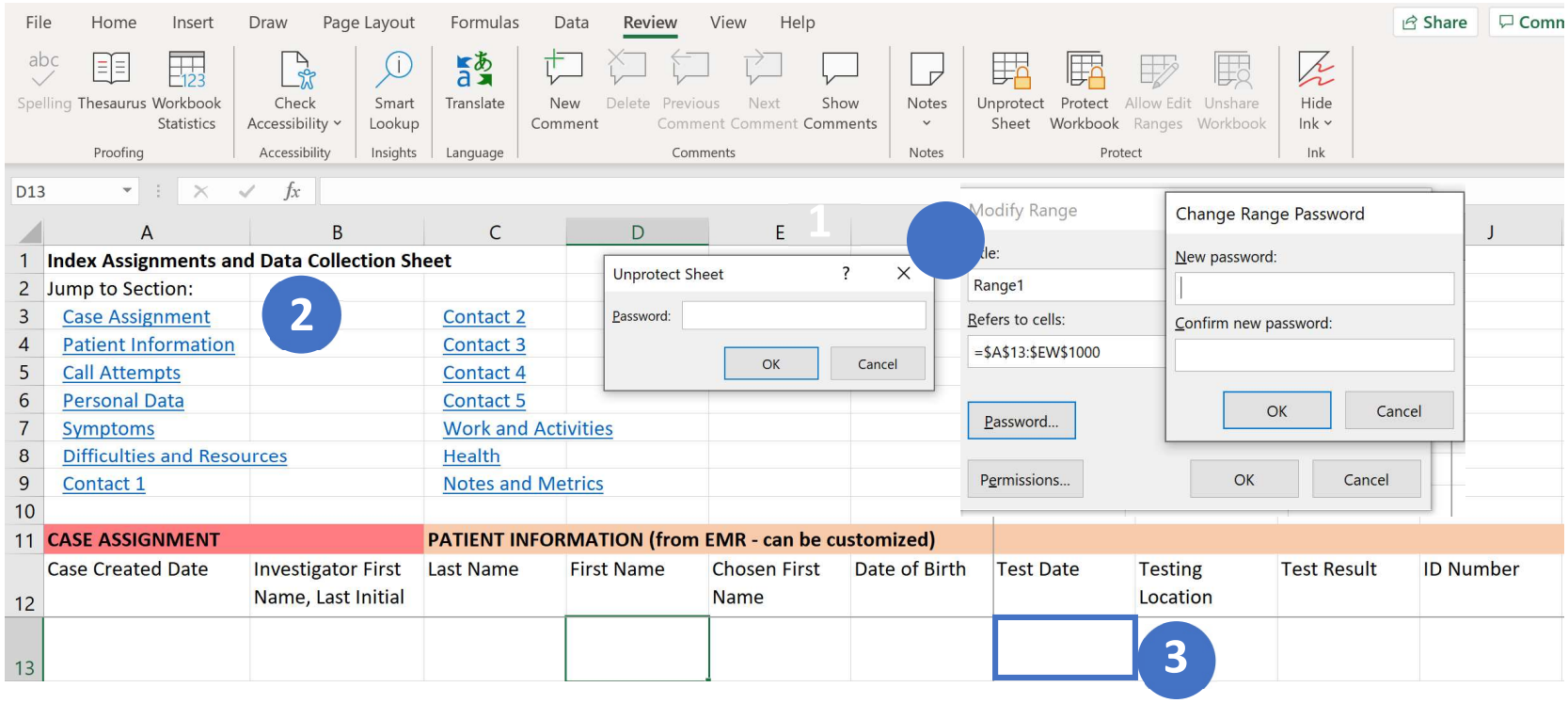
	Number of COVID-19 Screenings	Number of Positive Tests(indexes)	Positivity Rate	Estimated Number of contacts elicited for # of indexes*	Number of FTE's Needed**
Example	250	25	=C15/B15	=C15*1.5	=(C15/4)/20
			=C16/B16	=C16*1.5	=(C16/4)/20
			=C17/B17	=C17*1.5	=(C17/4)/20
			=C18/B18	=C18*1.5	=(C18/4)/20

Directions - Enter the Number of COVID-19 Screenings you have done in the last (4) weeks, the Number of Positive Tests(indexes) in the last (4) weeks.

** Assumes an interview contact index of 1.5*

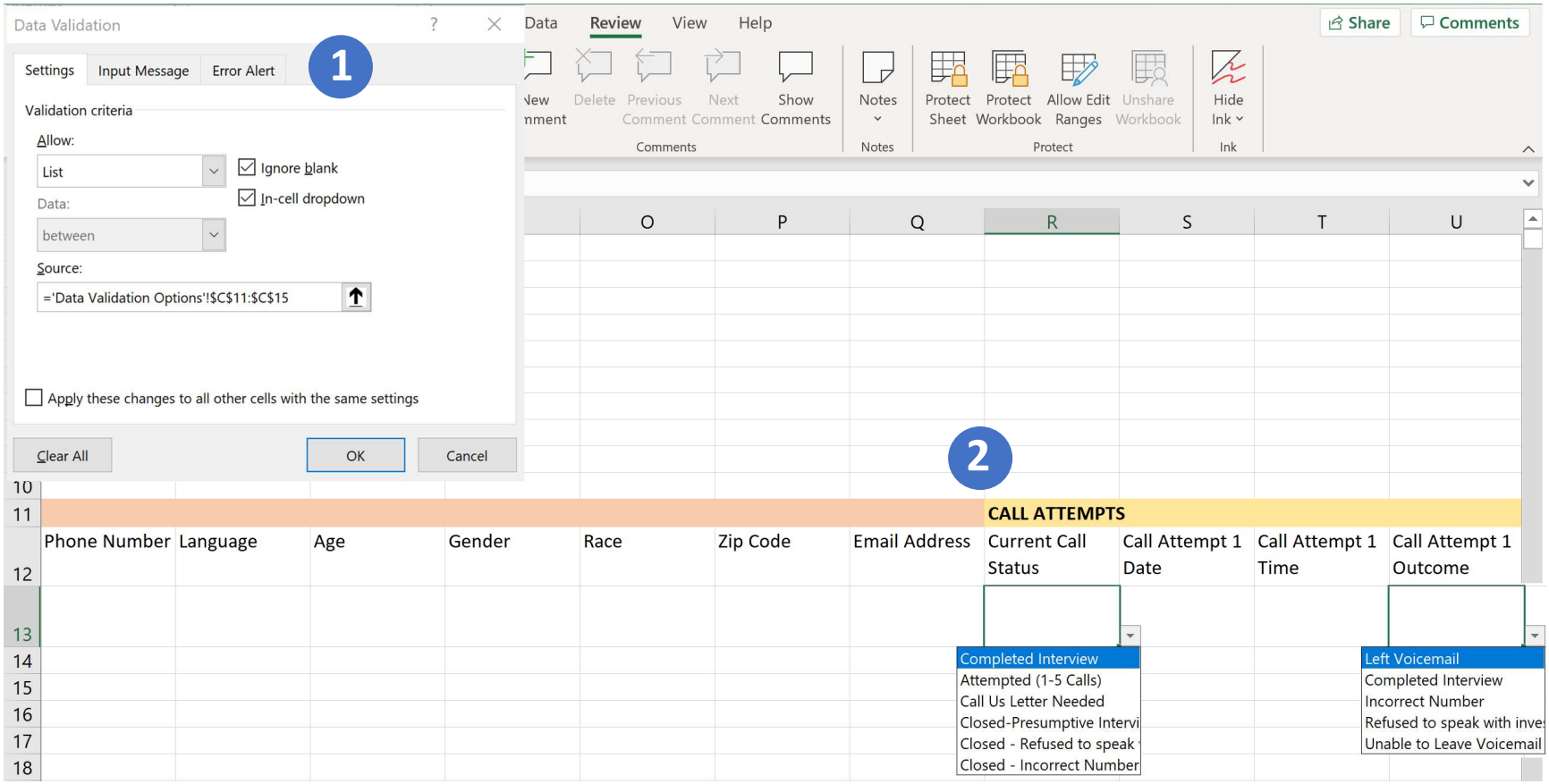
***On Average a full time contact tracer can conduct the required number of phone contacts, interviews, re-interviews, and contact notifications for (20) index patients per week.*

Appendix D1: Temporary Data Collection Tool



Key Features:

1. **Password Protection:** Under the "Review" tab, select "Protect Sheet" in order to require a password before editing the sheet and "allow edit ranges" to allow users to enter data in the appropriate range after entering a different password. We provided both passwords to managers to allow them to make changes to the tool, and the "edit range" password to all end users to allow them to enter data.
2. **Section Navigation:** Since this document is so long, we listed out each section at the beginning, with hyperlinks to that section in the document, in order to facilitate quicker navigation.
3. **Freeze Panes:** The sheet is frozen at cell G13 so that as users scroll, they will always have the section navigation and column headers at the top, and basic patient identifying information at the left.



Key Features:

1. **Data Validation:** For questions with discrete answer choices, use data validation to create drop down menus. Go to the “Data” tab, select “Data Validation,” select “List” from the “Allow” drop down menu. Type your drop down option into a separate sheet and then select those cells in the “Source” section of the Data Validation menu.
2. **Color Coded Section Headings:** Each section heading is merged across all of its columns and given a unique cell color to facilitate easier navigation.

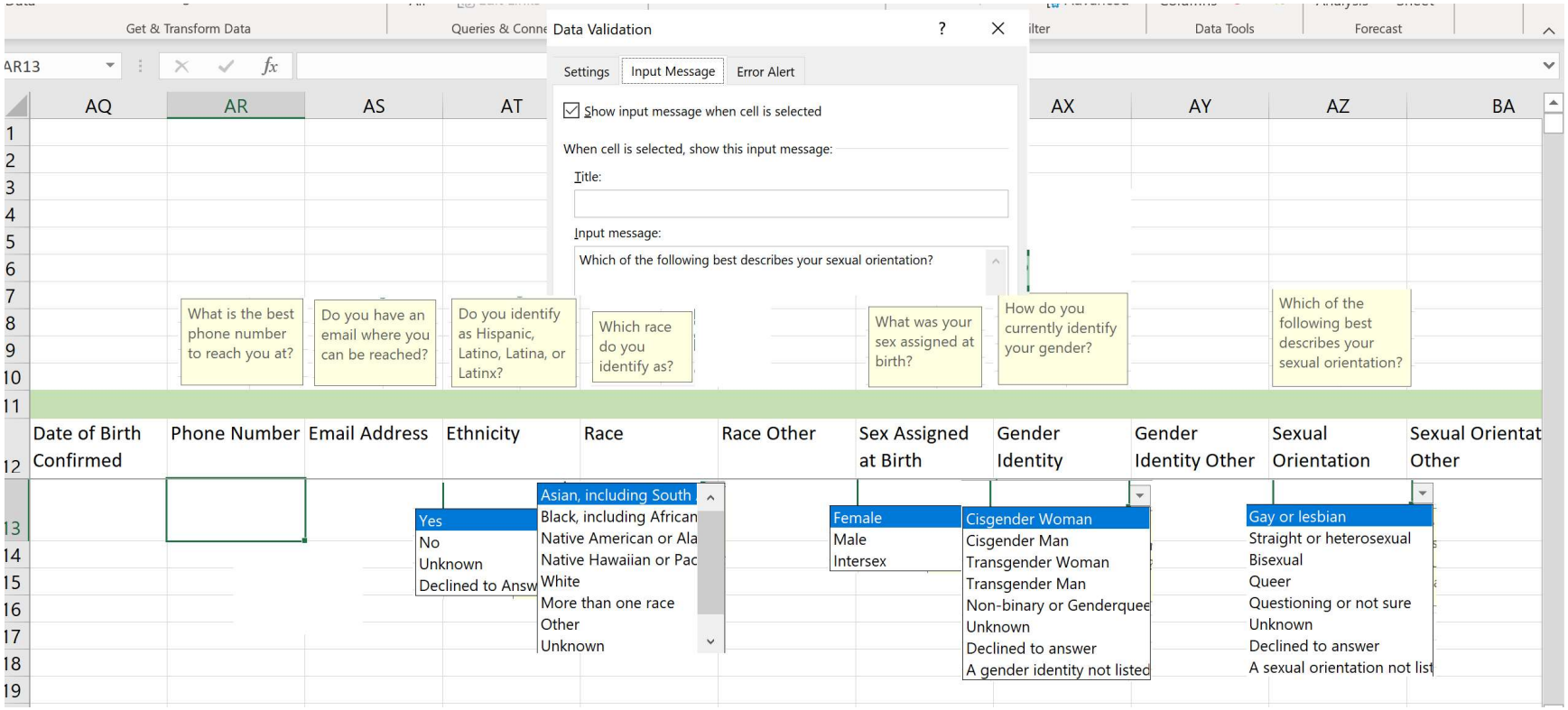
V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
Call Attempt 2 Date	Call Attempt 2 Time	Call Attempt 2 Outcome	Call Attempt 3 Date	Call Attempt 3 Time	Call Attempt 3 Outcome	Call Attempt 4 Date	Call Attempt 4 Time	Call Attempt 4 Outcome	Call Attempt 5 Date	Call Attempt 5 Time

Left Voicemail
Completed Interview
Incorrect Number
Refused to speak with inv
Unable to Leave Voicema

Left Voicemail
Completed Interview
Incorrect Number
Refused to speak with inv
Unable to Leave Voicema

Left Voicemail
Completed Interview
Incorrect Number
Refused to speak with inv
Unable to Leave Voicema

	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
11									INTERVIEW - PERSONAL DATA		
12	Call Attempt 5 Outcome	Follow Up Call Date	Follow Up Call Time	Follow Up Call Outcome	Referral Requests Completed?	RTW Letter Sent	Call us Letter Sent	Interview Data Recorded	Date of Interview	Name Confirmed	Date of Birth Confirmed
13											
14	Left Voicemail				Yes	Yes	Yes	Yes		Yes	Yes
15	Completed Interview				No	No	No	No		No	No
16	Incorrect Number										
	Refused to speak with ir										
	Unable to Leave Voicem										



Key Features:

1. **Help Text:** Questions from the script are displayed in help text when the cell is selected. In order to do this, open the Data Validation menu and select the second tab, “Input Message.” Check the “show input message cell is selected” box and enter the help text you want displayed in the “input message” box.

	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK
10										
11		**SYMPTOMS**								
12	Address	Cough	Fever	Chills	Shortness of breath/ difficulty breathing	Muscle/ body aches	Sore throat	New loss of taste/ smell	Diarrhea	Headache
14										
15		Yes								
16		No								
17		Declined to Answer								
18										

Please let me know if you've had any of the COVID-19 symptoms that I'm going to list over the past two weeks.

	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV
5											
6–10	Please let me know if you've had any of the COVID-19 symptoms that I'm going to list over the past two weeks.			When did your symptoms first start?	Are you currently or have you recently been hospitalized?	What was the name of the hospital?	Have you experienced any difficulties with work because of your COVID-19 status?	Have you experienced any new challenges with securing food since the pandemic?	Have you experienced any new challenges with securing housing since the pandemic?	Have you experienced any new challenges with having enough money to meet your needs?	
11							**DIFFICULTIES AND RESOURCES**				
12	New fatigue (tiredness)	Nausea/ vomiting	Congestion/ runny nose	First date of symptoms	Current/ recent hospitalization?	Name of Hospital	Difficulties with work	Challenges with food	Challenges with housing	Challenges with money	Other resource needs
13											Are there any other resources, possibly not mentioned that you are in need of right now?
14	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	
15	No	No	No		No		No	No	No	No	
	Declined to Answer	Declined to Answer	Declined to Answer		Declined to Answer		Declined to Answer	Declined to Answer	Declined to Answer	Declined to Answer	

Appendix D2_Shadowing Tool

Position Title:		Date of Shadow:	
Staff Name:		Manager Name:	
Competency	Praise	Areas to Grow	Rating 1(doesn't grasp it) - 4(nailed it)
Total Score:			0
Areas for Growth:			
Follow Up Needed:			

Case Investigation and Contact Tracing Measures

01/16/2022-04/30/2022

This report card illustrates the progress your healthcare facility Case Investigation and Contact Tracing (CICT) program has made for period: 01/16/2022-04/30/2022. The information for this report was pulled from the Chicago Department of Public Health (CDPH) Chicago CARES Salesforce (SF) database on 5/2/2022 and further analyzed and cleaned by the CDPH epidemiology team to check for and remove any duplicate entries. Thus, the information presented here might not correspond to reports and dashboards created through SF. Please contact your program officer if you notice a large discrepancy between the data pulled here and your internal data, need further clarification, or wish to discuss ways to improve the data for future report cards. **Thank you for the tremendous effort your organization is putting towards the CICT efforts across Chicago!**

The information presented here reflects your healthcare facility's case investigation and contact tracing program efforts based on the performance measures outlined in the scopes of service document. For demographic data to meet the standard performance, all successfully interviewed cases and contacts should have 90% of their demographic information completed, with only 10% missing. Please note that for age and zip code demographics, these metrics are represented by all cases and contacts rather than successfully interviewed cases and successfully notified contacts.

Table 1 | Case Investigation and Contact Tracing Data between 01/16/2022-04/30/2022

Total cases in SF (n)[1]	Cases successfully interviewed (n)[1,2]	Cases successfully interviewed (%)	Total contacts elicited in SF (n)[1]	Contacts successfully notified (n)[1,2]	Contacts successfully notified (%)	Contact Index[3]
382	236	61.8%	115	100	87.0%	0.5
METRIC GOAL		50.0%	**METRIC GOAL**		50.0%	1.0

Table 2 | Timeliness of Case Investigation Data between 01/16/2022-04/30/2022

Cases with a contact attempt (n)[1]	Cases with a contact attempt (%)	Cases interviewed within 24 hrs. (n)[1,2,4]	Cases interviewed within 24 hrs. (%)	Cases interviewed within 48 hrs. (n)[1,2,4]	Cases interviewed within 48 hrs. (%)
305	79.8%	211	55.2%	226	59.2%
METRIC GOAL			50.0%		

Table 3 | Timeliness of Contact Notification Data between 01/16/2022-04/30/2022

Contacts with a contact attempt (n)[1]	Contacts with a contact attempt (%)	Contacts notified within 24 hrs. (n)[1,2,4]	Contacts notified within 24 hrs. (%)	Cases notified within 48 hrs. (n)[1,2,4]	Contacts notified within 48 hrs. (%)
115	100%	97	84.3%	97	84.3%
METRIC GOAL			50.0%		

1. Data pulled from Chicago CARES Salesforce database on 5/2/2022 and all data are provisional and subject to change; 2. Successfully interviewed cases are defined as cases with a call disposition of 'Call Completed' or cases that were referred to the CDPH congregate settings team and successfully notified contacts are defined as contacts with a call disposition of 'Call Completed' or 'Call Completed, Vaccinated-Instructions given;' 3. The contact index (CI) is calculated as the ratio of contacts elicited per successfully completed cases; 4. Time period of data designated by the date from when the interaction is created in the SF database to when the respective case or contact is successfully interviewed or successfully notified (denoted by completion date in SF); cases investigations and contact notifications completed within 48 hrs. additionally include those case investigations completed within 24 hrs.

Table 4 | **Age breakdown for all cases & contacts** between 01/16/2022-04/30/2022

	Total [1]	0-17 yrs.[5]		18-44 yrs.[5]		45-64 yrs.[5]		65 yrs. and older (n)[5]		Missing	
	(n)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Cases	382	40	10.5%	248	64.9%	67	17.5%	18	4.7%	9	2.4%
Contacts	115	17	14.8%	50	43.5%	16	13.9%	7	6.1%	25	21.7%

Table 5 | **Missing Zip Code information for all cases & contacts**
between 01/16/2022-04/30/2022

	Total	Total zip codes missing or incorrect[6]	
	(n)	(n)	(%)
Cases	382	4	1.0%
Contacts	115	11	9.6%

Table 6 | **Race/Ethnicity breakdown for successfully interviewed cases & for successfully notified contacts**
between 01/16/2022-04/30/2022

	Cases[1]		Contacts[1]	
	(n)	(%)	(n)	(%)
Hispanic	32	13.6%	0	0.0%
Non-Hispanic Asian	8	3.4%	0	0.0%
Non-Hispanic Black	47	19.9%	0	0.0%
Non-Hispanic Native American or Alaska Native	0	0.0%	0	0.0%
Non-Hispanic Native Hawaiian or Pacific Islander	0	0.0%	0	0.0%
Non-Hispanic White	57	24.2%	0	0.0%
Non-Hispanic Multiple	2	8.5%	0	0.0%
Non-Hispanic Other	0	0.0%	0	0.0%
Non-Hispanic Declined to answer	4	1.7%	0	0.0%
Don't identify with choices	84	35.6%	0	0.0%
Missing[7]	0	0.0%	0	0.0%
Total successfully interviewed/ notified[2]	236		100	

Table 7 | **Sexual Orientation breakdown for successfully interviewed cases & successfully notified Contacts**
between 01/16/2022-04/30/2022

	Cases[1]		Contacts[1]	
	(n)	(%)	(n)	(%)
Gay or Lesbian	31	13.1%	1	1.0%
Bisexual	14	5.9%	9	9.0%
Straight or Heterosexual	125	53.0%	68	68.0%
Queer	17	7.2%	0	0.0%
Questioning or not sure	1	4.2%	0	0.0%
A sexual orientation not listed	0	0.0%	0	0.0%
Unknown	23	9.7%	11	11.0%
Declined to answer	22	9.3%	11	11.0%
Missing[7]	2	8.4%	0	0.0%
Total successfully interviewed/ notified[2]	236		100	

Table 8 | **Gender identify breakdown for successfully interviewed cases & successfully notified Contacts**
between 01/16/2022-04/30/2022

	Cases[1]		Contacts[1]	
	(n)	(%)	(n)	(%)
Female	93	39.4%	45	45.0%
Male	111	47.0%	45	45.0%
Transgender Woman	2	8.5%	2	2.0%
Transgender Man	0	0.0%	0	0.0%
Non-binary or genderqueer	0	0.0%	0	0.0%
Unknown	12	5.1%	6	6.0%
Declined to answer	9	3.8%	1	1.0%
Missing[7]	3	1.3%	1	1.0%
Total successfully interviewed/ notified[2]	236		100	

1. Data pulled from Chicago CARES Salesforce database on 5/2/2022 and all data are provisional and subject to change; 2. Successfully interviewed cases are defined as cases with a call disposition of 'Call Completed' or cases that were referred to the CDPH congregate settings team and successfully notified contacts are defined as contacts with a call disposition of 'Call Completed' or 'Call Completed, Vaccinated-Instructions given;' 3. The contact index (CI) is calculated as the ratio of contacts elicited per successfully completed cases; 4. Time period of data designated by the date from when the interaction is created in the SF database to when the respective case or contact is successfully interviewed or successfully notified (denoted by completion date in SF); cases investigations and contact notifications completed within 48 hrs. additionally include those case investigations completed within 24 hrs.; 5. Age calculated from date of birth to interaction created date; 6. Examples of erroneous zip codes include those with text responses and less than 5 digits; 7. Missing category excludes responses such as: 'Unknown,' 'Declined to answer,' 'Don't identify with choices,'