PUBLIC HEALTH INSTITUTE®

Evaluation Report
Tracing Health California Contact Tracing Support Initiative - San Bernardino County Integrated Project

June 2022

A Report By

POPULATION HEALTH INNOVATION LAB
A Program of the PUBLIC HEALTH INSTITUTE

LAND ACKNOWLEDGMENT

The Population Health Innovation Lab (PHIL) team respectfully acknowledges that we live and operate on the unceded land of Indigenous peoples throughout the U.S.

We acknowledge the land and country we are on today as the traditional and treaty territory of the Native American, Alaska Native, and Tribal nations who have lived here and cared for the Land since time immemorial. We further acknowledge the role Native American, Alaska Native, and Tribal nations have today in taking care of these lands, as well as the sacrifices they have endured to survive to this day.

KEY TERMS

CalCONNECT: A Salesforce-based CI/CT platform developed by the California Department of Public Health to support CI/CT activities and data management.

Case Investigator (CI): CI's conduct telephone outreach to people who tested positive for COVID-19 to provide isolation instructions, symptom monitoring information, to offer support resources, and conduct contact tracing.

Clinically Integrated Model: Embedding COVID-19 case investigation and contact tracing services into a clinical workflow at Kaiser Permanente.

Community Care Specialist: Updated title provided to Case Investigators/ Contact Tracers. Included all duties and responsibilities of CIs and CTs, with added duties of vaccine outreach, education, and scheduling.

Community Health Center Integrated Model: Providing on-site and virtual vaccine appointment, scheduling, and education at local community health centers.

Community Outreach Specialist: Updated title provided to Resource Coordinators. Included all duties and responsibilities of Resource Coordinators, with added duties of vaccine outreach, education, and scheduling.

Contact Tracer (CT): CT's conduct telephone outreach to persons who were identified by positive cases as having possibly been exposed to COVID-19 to discuss their potential exposure, provide information on how to quarantine effectively, information on how to monitor themselves for illness, and, as appropriate, refer them to testing or additional resources.

County Integrated Model: Embedding COVID-19 support (contact tracing, resource coordination, vaccine outreach, etc.) services into county workflows at Local Health Departments.

Epidemiologist: Epidemiologists conduct investigations and analysis used in the prevention and control of COVID-19 and other communicable diseases and in the planning of health programs and interventions.

Micro-Team: A case investigation and contact tracing unit structured with approximately 8-10 CCS, 1 COS and 1 Supervisor. 1 Team Manager would provide management support to an average of 4 micro-teams.

Resource Coordinator: Resource Coordinators identify social services and community resources that would benefit COVID-19 patients and their families. These resources may include food banks, mental health services, visiting nurses, and other community programs helping patients in need, isolation, or quarantine. Resource Coordinators also assist Contact Tracers and Case Investigators with phone calls to COVID-19 cases and contacts.

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REPORT SUMMARY

Impetus

The California Contact Tracing Support Initiative (CCTSI) is a partnership between Tracing Health (TH), a program of the Public Health Institute (PHI) and the Kaiser Permanente (KP) Community Benefit Fund at East Bay Community Foundation (EBCF).

This evaluation is a retrospective, qualitative assessment of processes and outcomes for the CCTSI's county-integrated efforts in San Bernardino County, California. The primary objectives were to 1) investigate San Bernardino County CCTSI project accountability, 2) determine future CCTSI project improvement strategies, and 3) document San Bernardino County CCTSI project knowledge generation and transfer opportunities.

Context

The COVID-19 pandemic was an unexpected, unprecedented, and hopefully a once-in-a-lifetime event that shaped the overall project context. While San Bernardino County was the first county with which CCTSI worked to conduct contact tracing and has been described by multiple interviewees as an exemplar CCTSI partnership, many recommendations that arose from this report suggest better project coordination and earlier onset planning would have lessened or eliminated many of the challenges faced by this county. Ultimately, the emergent and urgent nature of the pandemic made it difficult to prioritize these best practices.

Methods

Evaluation methods comprised 25 key informant interviews with senior staff, contact tracing and/or case investigation staff, and scientific staff; one focus group with program participants from all stakeholder groups; and a qualitative review of 439 documents. All data were coded for themes in Dedoose[1] and analyzed using framework analysis.[2,3,4] See detailed methods on page 41 for additional information about data collection and analytic approaches.

Results

The major themes identified from framework analysis include successes and challenges in project design and implementation, the impact of CCTSI and county workforce capacity, the diversity of CCTSI staff, training, and capacity building.

Successes in Project Design & Implementation
- **County Integration.** The integration of TH staff directly into county workflows and platforms was a successful project design element.
- **Motivation.** The COVID-19 pandemic motivated staff who felt a dedication to and pride in their work for CCTSI.

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[1]SocioCultural Research Consultants LLC 2018.
[2]Ritchie, J. & Spencer, L. 1994. Qualitative data analysis for applied policy research" by Jane Ritchie and Liz Spencer in A. Bryman and R. G. Burgess [eds.] "Analyzing qualitative data", 1994, pp.173- 194.
[3]Srivastava, A. & Thomson, S. B. (2009). Framework Analysis: A Qualitative Methodology for Applied Research Note Policy Research. JOAAG, Vol. 4. No. 2
[4]Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013.) Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Medical Research Methodology, 13(117). https://doi.org/10.1186/1471-2288-13-117.

- **Efficiency**. PHI hired, trained, and deployed staff at a record pace which allowed it to be responsive to the county's evolving needs. The project's overall success is due in part to the dedicated training and recruitment teams, project and learning management software, micro-team structure, and onboarding and training procedures.
- **Responsiveness**. PHI's flexibility and responsiveness to the county's evolving needs during the height of the pandemic contributed to a successful partnership. In addition to Community Care Specialists, the Community Outreach Specialists and Epidemiologists proved to be particularly valuable additions to building county capacity.
- **Impact Hiring and Staff Diversity**. The diversity of the staff, especially language diversity, served to build trust and help staff meet the needs of the community they served.
- **Project and Learning Management Software**. Software such as Zoho, TRAIN, Skillsoft Percipio, and Coursera, contributed to the success and organizational effectiveness of the project.

Challenges in Project Design & Implementation
- **The COVID-19 Pandemic**. The shifting and persistent pressures of the pandemic affected the project in many ways, including design and implementation, the need to pivot, and impact on staff mental health.
- **Staff Uncertainty**. Short-term contracts created instability and uncertainty for staff who reported feeling stress about their career sustainability; subsequently, many people left prior to the end of their contract term to seek stable employment.
- **County Contracting and Workflows**. The contracting and data sharing process was burdensome and time-consuming and would have benefited from a streamlined approach.
- **An Emerging Public Health Workforce**. Many TH staff who had never before worked in the public health field learned they were not eligible to apply for equivalent jobs at the county due to different job eligibility requirements. This reflects the unique hiring approach by PHI, see Diversity of CCTSI Staff, pg. 30.
- **Case Investigation/Contact Tracing (CI/CT) Relationships**. Micro-team staff reported limited relationships with senior staff beyond their supervisor.
- **Project Coordination and Management**. People at various levels reported a lack of understanding about the organizational structure of Tracing Health.
- **Transitioning CCTSI Staff**. Moving staff between roles or jurisdictions took time and resources, which created challenges with handling surges and responding quickly to evolving county needs.
- **CalCONNECT**. Access to CalCONNECT, a CI/CT and data management platform, was burdensome and inconsistent.

Impact on County Workforce Capacity
- **Increasing Workforce Capacity with Quality Staffing Services**. The contact tracing, case investigation, epidemiological, and resource coordination skills provided critical staffing services during the pandemic. Yet the burden on San Bernardino County to rapidly ramp up CCTSI staff on county workflows delayed some activities.
- **Improving County Processes**. CCTSI services moved well beyond merely staffing, they contributed to workflow improvements and provided information from other counties to improve overall operations in San Bernardino County.
- **Responding to County Priorities**. While the relationship between CCTSI and the county was mostly positive, some report that CCTSI used a top-down approach at times, rather than prioritizing the county's needs.

Diversity of CCTSI Staff
- **Increasing Workforce Capacity with Staff Diversity**. CCTSI provided a diverse workforce to support San Bernardino County's COVID-19 response efforts.
- **Community Impact Hiring**. TH prioritized impact hiring, focusing on communities hardest hit by COVID-19 and focusing recruitment efforts to prioritize staff who reflected the spoken language(s), racial diversity, and cultural nuance(s) of San Bernardino County residents.
- **Language and Culture**. CI/CT staff were able to effectively build trust and conduct quality services because of impact hiring and the diverse workforce provided by TH. Maintaining an active list of language capacities across the organization reduced reliance on the language line and improved service offerings.
- **Geographic vs. Community Impact Hiring**. TH discovered it was not critical to hire from the community in which they were working geographically, rather they emphasized hiring (remote staff) from the communities hardest hit by the pandemic.

Training and Capacity Building
- **Training and Onboarding**. TH developed a strong and robust training program which prepared staff to conduct COVID-19 CI/CT, counseling, and monitoring. This multi-week training program was informed, in part, by a needs assessment deployed to all TH staff in 2020.
- **Transitioning to Training in Cohorts**. Training in cohorts vs. onboarding each new staff person individually was an effective strategy that streamlined processes.
- **Future Training Considerations**. Suggestions for future improvements to the training program include: practical application training time, onboarding supervisors ahead of their teams, regular post-training check-ins with staff, consistent training for staff who switch roles, and targeted training in clinical or county integrated processes only as job duties require.

Data Management
- **CalCONNECT**. Access to CalCONNECT was a consistent challenge throughout the program (e.g., obtaining access generally, the proper level of access, etc.).
- **Standardization of Performance Metrics**. Performance metrics were inconsistent across the TH Program. This is due in part to competing priorities of funders, county or clinical workflows, and data collection platforms. Decisions regarding data use and performance metrics should be established early in the program to avoid complications later.
- **Performance Metrics for CI/CTs**. Considering context and limitations can improve the process of establishing performance metrics. This can include accounting for the human experience of some activities when identifying appropriate metrics and recognizing that calculations of data points may vary across platforms.

Recommendations

Lessons learned from this evaluation can be applied to future statewide or regional projects, especially when responding to public health emergencies, through establishing best practices for multisector collaborative programs, impact hiring, work force training, onboarding and development, and recruiting a culturally and linguistically diverse public health work force. Recommendations fell into six major categories: Looking Forward, Partnerships, Roles, and Responsibilities, Project Management and Coordination, Communications, Training, and Staffing.

Looking Forward

- **Use findings to solidify learnings and improve future programs**. As efforts addressing the COVID-19 pandemic have gradually decreased, PHI can engage in future work, such as county integrated partnerships, that will allow for growth and the application of learnings from this evaluation.
- **Host a project debrief discussion with the county and EBCF to collectively identify areas of success and improvement**. A final group assessment of what worked and what did not could inform future efforts and strengthen the relationship between parties.
- **Prepare teams and templates for future emergency response efforts**. Creating a nimble 'strike team' equipped with emergency response templates for how public health entities could respond to urgent needs and/or requests can expedite future projects of a similar nature. These teams could be assigned to counties or other organizations who need support in a particular area (e.g., staffing, epidemiological, or other public health services). Expediting turnaround time and reducing administrative burden can both decrease onboarding time and improve the team's ability to respond to the request faster, thus better supporting critical infrastructure, staffing, and project management needs at the local level.
- **Be nimble and flexible in responding to a crisis**. Not letting the perfect be the enemy of the good, especially in an emergent context like COVID-19, proved to be beneficial to PHI and the CCTSI program. The will and ability to be agile and flexible in responding to county needs strengthened project implementation and outcomes.
- **Evaluate processes to inform continuous quality improvement**. CCTSI succeeded in launching the San Bernardino county-integrated project quickly and improving processes by incorporating learnings along the way. Future efforts should ensure use of a similar approach to continuous reflection and integration of learning into project processes.
- **Streamline contracting and data sharing processes**. CCTSI's work with San Bernardino County required adapting to the county's contracting processes, as well as establishing data use and business associate agreements. This process could be streamlined in the future. For example, use standard language or county contract templates, flexible terms of service, or state-level data access permissions to CalCONNECT.
- **Establish a pathway to employment with county or state public health**. TH staff provided expertise, cultural and linguistic proficiency, and quality services to county health departments. PHI could explore the possibility of negotiating job eligibility requirements at the county level so that staff who provided critical services during their tenure at PHI could be eligible to continue providing these services as a county employee.

Partnerships, Roles, and Responsibilities

- **Discuss roles, responsibilities, and the nature of the partnership.** Clarifying at the outset how PHI, EBCF, and KP would work together, as well as how PHI would support San Bernardino County, can help align priorities, clarify roles, and strengthen partnerships, respectively.
- **Prioritize county needs and priorities**, over PHI or funder priorities can strengthen local partnerships and ensure county needs are met.
- **Develop an organizational chart.** Ensure all partners and staff members have access to and are aware of this reference document.

Project Management and Coordination

- **Improve data sharing processes.** This includes developing data sharing agreements, Health Insurance Portability and Accountability Act (HIPAA) compliance, addressing data entry platform challenges, and providing pre-approved standardized access to CalCONNECT and/or other state/local data platforms.
- **Use local county processes.** Utilizing county-approved templates, software programs, and/or contracts can expedite providing quality and needed services to local health departments. Using the county process allows the project to more quickly respond to and prioritize county needs over other goals (i.e., funder needs). Using the county process also demonstrates PHI's ability to be flexible and increase the value of the services provided to counties. Utilizing local county processes can also improve data sharing activities.
- **Structure broad agreements.** This will allow for various types of support and can eliminate the need for ongoing contract renegotiations.
- **Ensure pre-survey completions.** Identifying the preferred language of a case or contact through a county-administered pre-survey can help expedite processes by ensuring a Community Care Specialist, Community Outreach Specialist, or other staff service provider is able to reach out to individuals in the language they are most comfortable speaking.
- **Establish team and project metrics and standards.** Metrics and standards should be identified at the beginning of the project and updated regularly as a part of ongoing process improvement procedures to ensure services are timely and appropriate. The project timeline should build in time and the expectation to use project data for program improvement along the way.
- **Automate systems**, such as data management, report generation, systems for tracking hiring and training, and other project-related outcomes. This will save time, reduce administrative burden on staff, and reduce errors.
- **Maintain a list of staff and the languages they speak. Make this list available to the entire workforce.** While variations of this list existed throughout the project lifecycle, they were not updated nor available to all. Having a list of staff and the languages spoken or a way to connect staff directly within CalCONNECT or other platforms can prevent the need to utilize external language line services, which were not as valuable to community members.

Communications

- **Streamline communications and ask for input ahead of time** from staff members who will be directly impacted by changes. Establish processes for clear communication and ensure that all employees are aware of new information and where it can be found. This can be particularly challenging, but even more important with a large workforce and multiple partners.
- **Establish procedures for retaining institutional knowledge**. Microsoft SharePoint served as a central repository for most program documents and protocols, but some institutional knowledge is at risk of being lost due to staff attrition and/or a lack of documentation.
- **Standardize and provide regular communication**. Communications included a staff newsletter, regular internal and external meetings, and implementation checklists to guide staff activities.

Training

- **Provide shadowing and practical opportunities for training**. This was provided to CI/CT staff in training, but many felt they could have benefited from additional hours of mock interview training. Including opportunities to shadow both TH and county staff was also requested.
- **Provide adequate training for staff who switch roles**. When TH staff switch roles, for example, from a Community Care Specialist to a Community Outreach Specialist or Vaccine Ambassador, new training should be offered that matches the new role.
- **Hire and train in cohorts**. Hiring and training in cohorts of 30-40 people, as opposed to onboarding on a weekly or as-hired approach, improved the efficiency and quality of trainings provided to new hires.
- **Hire and train supervisors first**, so they are ready to support new teams onboarding to CCTSI.
- **Identify opportunities for training refreshers**. This could be accomplished with regular supervisor/manager team check-ins and quality control procedures. Ensuring information, protocols, and procedures are understood and retained after training can help improve service quality.
- **Focus on clinical or county trainings, not both**. Save time and resources up front by offering trainings on clinical- or county-integrated work as they are needed. Avoid staff time spent on trainings that are not immediately relevant to their role.

Staffing

- **Retain and promote talent**. Specifically, Community Outreach Specialists and Epidemiologists were reported to provide valued resources and skill sets to county services.
- **Improve flexibility of internal staff assignments between counties**. Creating systems for easier movement between jurisdictions can help ensure county needs are being met, that staff are utilized to their full potential, and that PHI is responsive to the fluctuating requirements of public health at the local level. Creating nimble and flexible systems and planning ahead with contracting, data systems, human resources (HR) processes, and training procedures to allow people to transfer between jurisdictions would benefit staff and clients.
- **Employ longer-term staffing contracts**. Staff contracts of less than six months create instability and uncertainty. Stability is necessary to hire and maintain a high-functioning workforce Ensure job eligibility matches local, state, or other position descriptions and connecting staff with similar roles between jurisdictions can help lengthen contract dates and improve stability of services and staffing. Another option is to identify new work that matches existing staff skills, such as recovery work.

Conclusion

The CCTSI San Bernardino County integrated project met its goals of recruiting, hiring, training, and maintaining a remote CI/CT workforce to support the county's COVID-19 response efforts. There were many unique aspects of this project, including the COVID-19 pandemic context, novel relationship structures, and the rapid pace of project design and implementation. The most successful aspects of program design and implementation were the rich diversity in staff and a robust training program, which prepared micro-teams well for the demanding work of CI/CT. Factors contributing to the success of the program included the integration and overall positive relationship with the county and dedicated teams for training and recruitment. Challenges included the constant shifting and pressures of the pandemic, a lack of definition and communication around roles and responsibilities among TH staff at various levels and between different partners such as the county and funder, administrative burden of some project activities, and challenges with data security and CalCONNECT. This evaluation presents an opportunity to highlight important learnings from this project and consider how to carry them forward to future projects.
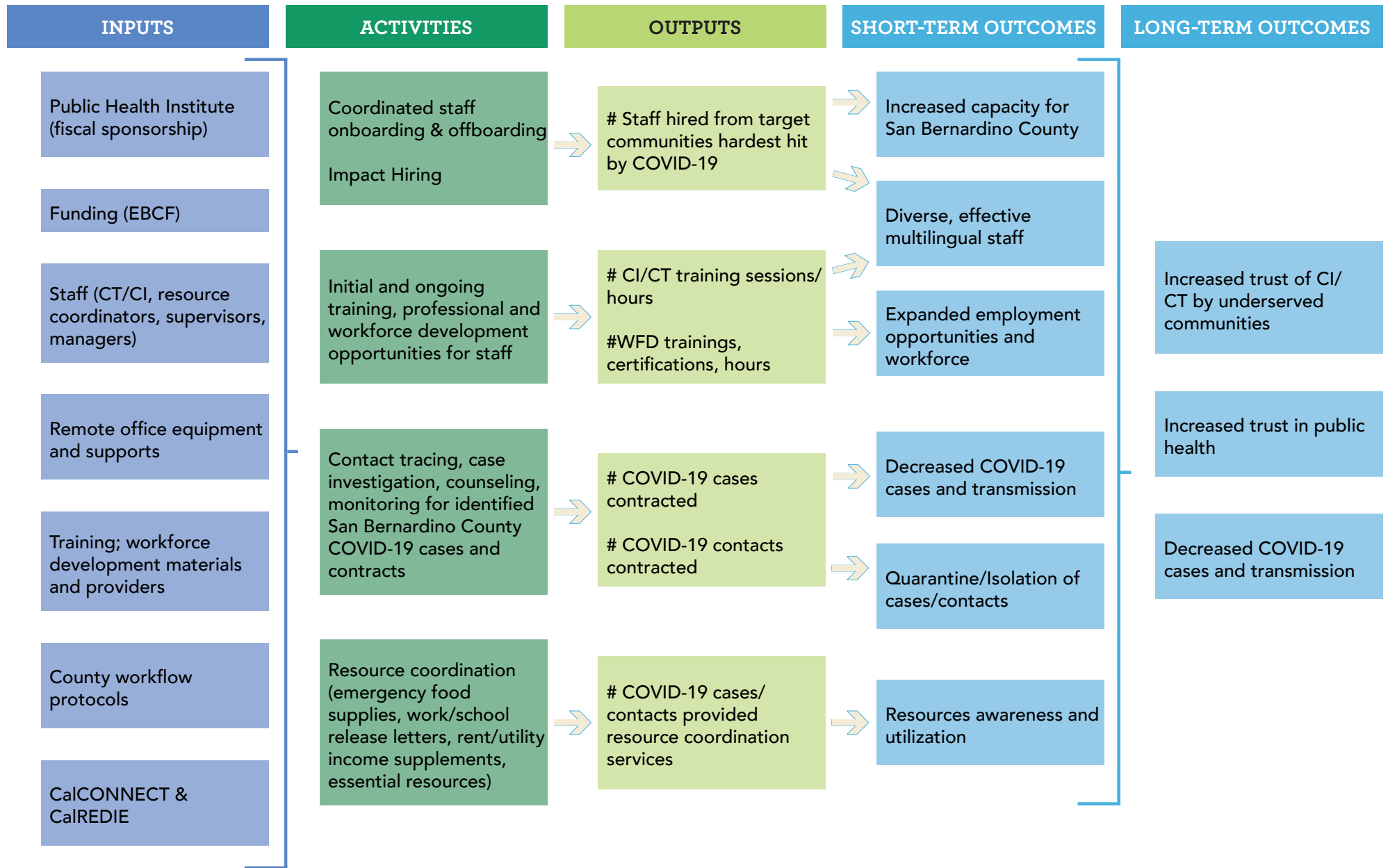
IMPETUS FOR THIS REPORT

Background on CCTSI and San Bernardino County

The Public Health Institute's (PHI) California Contact Tracing Support Initiative (CCTSI) is a partnership between PHI's Tracing Health program and the Kaiser Permanente's (KP) Community Benefit Fund at East Bay Community Foundation (EBCF) launched in August 2020 and scheduled to conclude June 30, 2022.

San Bernardino County was the first county-integrated location CCTSI supported in California. CCTSI began working with San Bernardino County Department of Public Health in September 2020 to support ongoing case investigation (CI) and contact tracing (CT), COVID-19 counseling, resource coordination, and daily case/contact management to control and suppress outbreaks due to the SARS-COV2 virus. The project later evolved to include clinically integrated case investigation and contact tracing (CI/CT) and vaccine distribution support across multiple counties in California.

This evaluation of the CCTSI's work in San Bernardino County seeks to understand the extent to which the county-integrated CI/CT support model was successful in this county. Evaluation findings serve as a case study with potential implications for CCTSI's other county-integrated efforts in California, Oregon, and Washington, and a reference for future projects of the initiative.

Project Logic Model

INPUTS	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	LONG-TERM OUTCOMES
Public Health Institute (fiscal sponsorship)	Coordinated staff onboarding & offboarding Impact Hiring	# Staff hired from target communities hardest hit by COVID-19	Increased capacity for San Bernardino County	
Funding (EBCF)			Diverse, effective multilingual staff	
Staff (CT/CI, resource coordinators, supervisors, managers)	Initial and ongoing training, professional and workforce development opportunities for staff	# CI/CT training sessions/hours #WFD trainings, certifications, hours	Expanded employment opportunities and workforce	Increased trust of CI/CT by underserved communities
Remote office equipment and supports				
Training; workforce development materials and providers	Contact tracing, case investigation, counseling, monitoring for identified San Bernardino County COVID-19 cases and contracts	# COVID-19 cases contracted # COVID-19 contacts contracted	Decreased COVID-19 cases and transmission	Increased trust in public health
County workflow protocols			Quarantine/Isolation of cases/contacts	Decreased COVID-19 cases and transmission
CalCONNECT & CalREDIE	Resource coordination (emergency food supplies, work/school release letters, rent/utility income supplements, essential resources)	# COVID-19 cases/contacts provided resource coordination services	Resources awareness and utilization	

CCTSI Project Goals

1. Maintain a fully remote contact tracing staff to conduct CI/CT, COVID-19 counseling, and daily monitoring in alignment with California Department of Public Health (CDPH)/State of California metrics.
2. Recruit and hire staff to support these efforts, giving priority to applicants in areas hardest hit by the COVID-19 pandemic; bilingual candidates speaking Spanish, Cantonese, and Mandarin; and those located in San Bernardino County and the Inland Empire region.
3. Execute a seamless onboarding and training process for incoming contact tracing staff to ensure successful entry into the contact tracing program.

Purpose of CCTSI Evaluation

This evaluation was conducted by the Division of Research and Network Science at the Population Health Innovation Lab (PHIL), a program of PHI. PHIL conducted a retrospective, qualitative assessment of the process and outcomes for the CCTSI's county-integrated efforts in San Bernardino County, California. The evaluation was conducted between December 1, 2021 and May 31, 2022.

The primary objectives of the evaluation were to investigate:

1. **San Bernardino County CCTSI project accountability**: Assess the extent to which project goals were achieved.
2. **Future CCTSI project improvement**: Identify lessons learned and recommendations to improve future county-integrated CI/CT efforts.
3. **San Bernardino County CCTSI project knowledge generation and transfer**: Identify barriers and facilitators of successful county-integrated project implementation that can be used to inform other implementation efforts.

CONTEXT

It is essential to acknowledge the context of the Tracing Health program, the CCTSI model, and the pandemic response in San Bernardino County when interpreting evaluation findings. Most notably, the COVID-19 pandemic was an unexpected, unprecedented, hopefully a once-in-a-lifetime event that shaped the overall project context.

The lessons learned from this evaluation can be applied to future urgent statewide or regional projects, as well as inform routine best practices when setting up future collaborative programs, impact hiring, workforce development, and culturally and linguistically competent public health efforts.

The San Bernardino County Partnership was Unique
Each county in California managed COVID-19 contact tracing differently, implementing their own contracting process, relationships, workflows, and more. San Bernardino County was the first county that CCTSI worked with to conduct county-integrated CI/CT efforts and has been described by multiple interviewees as an exemplar in its response and partnership. While many findings from this evaluation can be applied to other counties, it is important to remember this context.

Motivation and Burnout
As a result of targeted impact hiring, tailored training, company culture, and workforce development, staff hired by PHI for the CCTSI program were motivated to give their best efforts to the program. However, the consistently evolving priorities of the pandemic coupled with the mental and emotional toll of supporting communities dealing with loss, fear, and confusion, all contributed to staff burnout.

Complex Relationships
The relationship between EBCF as a funder and PHI as a grantee operated under unusual circumstances because of the COVID-19 pandemic. Similarly, the structure of the contractual relationship between PHI and San Bernardino County was expedited in a process novel to both partners. The speed of implementation and the evolving priorities of the COVID-19 pandemic all contributed to a lack of clarity regarding relationships and roles. This led to confusion and challenges with respect to project design and implementation.

Planning During Emergencies
Many of the suggested recommendations that arose out of this report suggest project coordination and planning prioritized at the onset could have lessened or eliminated many of the challenges. Ultimately, the emergent and urgent nature of the COVID-19 pandemic made it difficult to prioritize these best practices. It is useful to consider this advice for all future projects and understand the unique circumstances of the pandemic when reflecting on what could have been done differently.

Evaluation Scope
The scope of this evaluation does not include clinically integrated work, vaccine outreach, support offered to other county health departments, or workforce development. This evaluation is retrospective, and information was gathered from people involved in the program over varying terms and time periods. The evaluation team endeavored to map findings and changes over time.

This evaluation report is an opportunity to highlight lessons learned from the CCTSI project in San Bernardino County. It is a unique and powerful opportunity to consider what can be done now to institutionalize important findings from this project and carry them forward to future operations.

> "I've never felt the need to timestamp more in an evaluation than I have with this process. Because of having done all of this in the middle of a completely chaotic, ever-changing, high-pressure pandemic situation, both personally and professionally for every single person on our staff."

- Senior Staff Member

RECOMMENDATIONS

> "I do think Tracing Health has a place to continue to support our communities, whether it's dealing with the pandemic... even to looking at a broader public health... how can we support the counties that are impacted by fires? Wouldn't it be great to take these well-trained community people and help them support those people without food, and shelter, and gas, and no wallets? I think Tracing Health has a great potential."
>
> - Senior Staff Member

Looking Forward

- **Use findings to solidify learnings and improve future programs.** As efforts addressing the COVID-19 pandemic have gradually decreased, PHI can engage in future work, such as county integrated partnerships, that will allow for growth and the application of learnings from this evaluation.
- **Host a project debrief discussion with the county and EBCF to collectively identify areas of success and improvement.** A final group assessment of what worked and what did not could inform future efforts and strengthen the relationship between parties.
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- **Be nimble and flexible in responding to a crisis.** Not letting the perfect be the enemy of the good, especially in an emergent context like COVID-19, proved to be beneficial to PHI and the CCTSI program. The will and ability to be agile and flexible in responding to county needs strengthened project implementation and outcomes.
- **Evaluate processes to inform continuous quality improvement.** CCTSI succeeded in launching the San Bernardino county-integrated project quickly and improving processes by incorporating learnings along the way. Future efforts should ensure use of a similar approach to continuous reflection and integration of learning into project processes.
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> "[Tracing Health] has changed drastically in just a year and a half that we've been working, I mean, it's really come up to speed and up to date, and, you know, has turned into an effective program."
>
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Partnerships, Roles, and Responsibilities
- **Discuss roles, responsibilities, and the nature of the partnership.** Clarifying at the outset how PHI, EBCF, and KP would work together, as well as how PHI would support San Bernardino County, can help align priorities, clarify roles, and strengthen partnerships, respectively.
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- **Structure broad agreements.** This will allow for various types of support and can eliminate the need for ongoing contract renegotiations.
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improvement along the way.

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- **Maintain a list of staff and the languages they speak. Make this list available to the entire workforce.** While variations of this list existed throughout the project lifecycle, they were not updated nor available to all. Having a list of staff and the languages spoken or a way to connect staff directly within CalCONNECT or other platforms can prevent the need to utilize external language line services, which were not as valuable to community members.

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Staffing
- **Retain and promote talent**. Specifically, Community Outreach Specialists and Epidemiologists were reported to provide valued resources and skill sets to county services.
- **Improve flexibility of internal staff assignments between counties**. Creating systems for easier movement between jurisdictions can help ensure county needs are being met, that staff are utilized to their full potential, and that PHI is responsive to the fluctuating requirements of public health at the local level. Creating nimble and flexible systems and planning ahead with contracting, data systems, human resources (HR) processes, and training procedures to allow people to transfer between jurisdictions would benefit staff and clients.
- **Employ longer-term staffing contracts.** Staff contracts of less than six months create instability and uncertainty. Stability is necessary to hire and maintain a high-functioning workforce Ensure job eligibility matches local, state, or other position descriptions and connecting staff with similar roles between jurisdictions can help lengthen contract dates and improve stability of services and staffing. Another option is to identify new work that matches existing staff skills, such as recovery work.

RESULTS

Successes in Project Design & Implementation

➔ **County Integration.** The integration of TH staff directly into county workflows and platforms was a successful project design element.

➔ **Motivation.** The COVID-19 pandemic motivated staff who felt a dedication to and pride in their work for CCTSI.

➔ **Efficiency in Program Design and Implementation.** PHI hired, trained, and deployed staff at a record pace which allowed it to be responsive to the county's evolving needs. This is in part due to the dedicated training and recruitment teams, program management software, micro-team structure, and onboarding and training procedures.

➔ **Response to County Needs.** PHI's flexibility and responsiveness to the county's evolving needs during the height of the pandemic contributed to a successful partnership. In addition to Community Care Specialists, the Community Outreach Specialists and Epidemiologists proved to be particularly valuable additions to building county capacity.

➔ **Impact Hiring and Staff Diversity.** The diversity of the staff, especially language diversity, served to build trust and help staff meet the needs of the community they served.

➔ **Project and Learning Management Software.** Software such as Zoho, TRAIN, Skillsoft Percipio, and Coursera, contributed to the success and organizational effectiveness of the project.

County Integration

The partnership between PHI and San Bernardino County was largely seen as positive and beneficial from both agencies. San Bernardino County representatives reported that the CCTSI teams improved their ability to close cases and improved the county's workflows. The fact that CCTSI brought well-trained staff who were largely bilingual or multi-lingual made a meaningful impact on the county's pandemic response effort.

PHI valued the county's willingness to accept many micro-teams throughout the course of their work together, serving as a "training field" for teams in transition to other areas. As some counties served by CCTSI would "pack it all up" once a COVID-19 surge dissipated, San Bernardino County acted as a home base for these groups in transition. Further, San Bernardino County was willing and able to effectively utilize TH staff to conduct recovery interviews (contacting cases beyond their isolation and quarantine periods to collect additional information) and vaccine support work.

> "San Bernardino ended up being kind of our training field. So, when new teams would get brought on, San Bernardino is where they would go to get trained, because they were such an efficient, well-oiled machine there. So, they ended up being instrumental in training all CI/CT staff as they came on board." - Senior Staff Member

> "San Bernardino was just an incredible partner in that front because they were so willing to just roll with everything that we were rolling with, and they were so willing to integrate us. And they were so willing to kind of be that partner that we really needed at that time in order to be successful." - Senior Staff Member

One of the most successful design components was the integration of TH staff into the county's workflow. Having TH staff working in concert with county staff allowed a more streamlined approach to CI/CT overall. The CCTSI staff worked directly in CalCONNECT and micro-team managers and supervisors communicated with San Bernardino County team managers to align workflows and priorities.

> "San Bernardino County, why I consider this model of all that we did the most successful is because we were integrated into the county…. we were connected to the county's infrastructure and helping build the county's resources and not trying to go out on our own or circumvent public health response and surveillance. So, from that standpoint, we were a partner to the county." – Senior Staff Member

Motivation

There was dedication to and pride in the work done by TH staff. People felt motivated to be making a difference in people's lives during the COVID-19 pandemic. Many interviewees reported a sense of satisfaction and motivation with the work, as demonstrated by one person's statement that "I feel lucky to have participated in this program." The devotion to the mission and urgency of the pandemic contributed to the feeling of "start-up culture" at TH and gave people's day-to-day work experience a greater sense of purpose.

"I know this is a job at the end of the day. But also for a lot of people, this is a job that they chose. They wanted to help out during the pandemic."
- CI/CT Staff Member

"I think that pride in their work and their commitment to the communities has enabled us to do the work and be as effective as we've been, because we have great people feeling very strong. And this is their mission to do this work."- Senior Staff Member

Efficiency in Program Design and Implementation

PHI operated quickly to establish a contractual relationship with San Bernardino County to support their COVID-19 response needs. The efficiency with which PHI and the TH program were able to begin operating in the county was a key success of the program.

"Everybody was always on the same page. There was no running around. If you [had] any questions, questions are answered quickly and efficiently. It was probably one of the best counties, I think, that we've worked for."
– CI/CT Staff Member

The ability of Tracing Health to rapidly hire, train, and deploy a high-functioning team to San Bernardino County in record time was an oft-cited strength of the program. Many credited the Talent and Recruitment Team and the Training Team for successfully coordinating a massive onboarding effort and a prepared workforce capable and ready to meet program expectations and metrics. The teams assigned to San Bernardino were deployed quickly and were able to successfully navigate numerous new processes and complex systems thanks to their background, experience, and training. The robust training and onboarding offered by PHI prepared CI/CTs for their work and provided a positive and productive work environment from the onset.

"Within weeks of getting the notification of award, we were already serving our communities... in a really meaningful way with a cohort that was all Spanish speaking... really useful" – Senior Staff Member

"I think that was a real highlight of the work that PHI did, what they were able to do in terms of the hiring and training of the staff, and the goals that they set out at the beginning. I feel like they just really knocked that one out of the park.... The demographics of who they hired and all the different training that they put them through and the professional development that they provided was amazing." - Senior Staff Member

Response to County Needs

Once the projected was established in the county, the flexibility of TH to adapt to the county's evolving needs was essential to this successful partnership. TH was able to pivot quickly to deploy additional staff, offer resources and vaccine coordination, and provide epidemiological services. Recovery work, in which CCTSI staff contacted still-open cases past their quarantine period to close them or direct them to vaccine or other resources, was a value-add to the county in times when COVID-19 cases lulled. There were challenging aspects to the program where flexibility was limited by administrative hurdles, but from the perspectives of many at the county, TH was able to respond to their needs in a relatively timely manner. This was especially true at the height of the pandemic.

> *"We were able to do some really creative things with the county because we had rapport... This county is a good example... of the way the pandemic evolved, and the way that county responses toward the pandemic evolved, and the way that a really good implementing partner could continue to serve the county. And this speaks so broadly to the importance in public health of not siloing this kind of implementation…. We really had the opportunity... to serve that [San Bernardino] community... in any kind of capacity they needed us."* – Senior Staff Member

In addition to Community Care Specialists, the Community Outreach Specialist and Epidemiologists proved to be helpful to building county capacity. These resources were either unavailable or had limited availability at the county prior to CCTSI's support and were highly valued.

Impact Hiring and Staff Diversity
Impact hiring enabled TH to provide quality services and hire from communities most impacted by COVID-19. By avoiding traditional employment requirements, such as educational attainment, PHI deepened its pool of competitive candidates and was able to hire high-functioning, passionate people ready to serve their communities.

Demographic diversity (especially linguistic diversity) was achieved by the program and made a positive impact on work outcomes through closing cases, building trust, and gathering necessary information from contacts. Having Community Care Specialists who spoke the preferred language of the cases was an immediate benefit as demonstrated by how quickly and openly they were able to engage with cases. This connection contributed to gathering more in-depth information than if staff spoke in English or used a translator from the language line.

> *"The fact that a lot of the vaccine ambassadors were bilingual. I think that played a very impactful role in our outreach efforts. A lot of the Spanish speaking individuals who we approached or approached us, they seemed happy at the fact that we were bilingual, we were able to give out that information in Spanish. It made them trust us a little bit more."* – CI/CT Staff Member

Work culture also played an important role in project design and implementation. On an organizational level, cultural representation contributed to a sense of pride and was felt by some to be part of the commitment to the work of TH and directly supporting their community. The culture of TH was felt to be supportive of growth and self-care, and prioritized diversity. The micro-team structure of the program contributed to the culture of support and camaraderie among employees, helping to mediate potential burnout and stress. There was a supportive, positive work culture and a broadly felt commitment to the mission of CCTSI: helping people during the pandemic.

> *"Micro-teams have been really important to people. Our teams are incredibly bonded. And I think that sense of bonding has gotten them through…. They look forward to their evening debriefs, and they always know there's somewhere they can go for support for someone they can turn to if they've just had a really bad call, or just dealing with really difficult circumstances."* - Senior Staff Member

Project and Learning Management Software
Software such as Zoho, TRAIN, Skillsoft Percipio, and Coursera, helped increase efficiency and management of employee data and training progression. As a result of an early needs assessment, many new training offerings and tracking tools were researched, launched, and standardized. The utilization of project management software grew along with the program's needs and size, allowing for more accurate and efficient management of data.

Challenges in Project Design & Implementation

➡ **The COVID-19 Pandemic.** The shifting and persistent pressures of the pandemic affected the project in many ways, including design and implementation, the need to pivot, and impact on staff mental health.

➡ **Staff Uncertainty.** Short-term contracts created instability and uncertainty for staff who reported feeling stress about their career sustainability; subsequently, many people left prior to the end of their contract term to seek stable employment.

➡ **County Contracting and Workflows.** The contracting and data sharing process was burdensome and time-consuming and would have benefited from a streamlined approach.

➡ **An Emerging Public Health Workforce.** Many TH staff who had never before worked in the public health field learned they were not eligible to apply for equivalent jobs at the county due to different job eligibility requirements. This reflects the unique hiring approach by PHI, see Diversity of CCTSI Staff, pg. 30.

➡ **Case Investigation/Contact Tracing (CI/CT) Relationships.** Micro-team staff reported limited relationships with senior staff beyond their supervisor.

➡ **Project Coordination and Management.** People at various levels reported a lack of understanding about the organizational structure of TH.

➡ **Transitioning CCTSI Staff.** Moving staff between roles or jurisdictions took time and resources, which created challenges with handling surges and responding quickly to evolving county needs.

➡ **CalCONNECT.** Access to CalCONNECT, a CI/CT and data management platform, was burdensome and inconsistent.

The COVID-19 Pandemic

The COVID-19 pandemic was a major inherent challenge, both emotionally and contextually. The unique needs of counties and staff were constantly shifting with respect to surges or lulls in cases, vaccine availability, mask mandates, pandemic guidelines, and other external factors impacting trust in public health. The daily duties of CI/CT staff members were emotionally and mentally taxing. Many staff were supporting communities experiencing death, disease, loss, and fear on a regular basis. CI/CT staff were subjected to verbal abuse experienced during outreach to cases and contacts that imposed an additional toll on their mental health.

> "I think the important thing to remember, is that when you're in a pandemic, everything moves really fast. And so you can't hold yourself to this setup - your logic model setup or performance expectations" - Senior Staff Member

Staff Uncertainty

Short-term contracts and administrative challenges when moving staff between jurisdictions and roles created challenges. Short-term contracts with unpredictable termination dates for staff were stressful. Several staff left before the end of their potential employment term because they were unsure how long their position would last. When transitioning between roles at TH, many staff reportedly did not receive re-training for the new role (e.g., a Community Care Specialist transitioning to a Community Outreach Specialist role). These administrative burdens created inefficiencies within the program and added stress to employees.

County Contracting and Workflows

PHI contracted with counties, including San Bernardino County, on an individual basis rather than through the state. During the process of contract review and approval in San Bernardino County, it was realized that using the county's own contract templates streamlined the process of review and approval at the county level. In addition, this standard language template included important elements like the county's typical data sharing parameters which were useful to the ongoing collaboration. A further learning was that utilizing broad contract language about the scope of work TH provides to the county creates flexibility in the services that can be provided without the need to renegotiate (i.e., amend) the contract. In the future, using the county's contract templates and making contracts as broad as possible would be helpful, so that contracting can be more efficiently managed and reduces the need for contract amendments.

> "There have to be some waivers of all of the detailed contract processing that we need to put in place so that the next big crisis, there should be some emergency templates for short term contracts that you can just rapidly turn around." – Senior Staff Member

Workflows specific to San Bernardino County were slow to be developed and did not initially comply with HIPAA and data privacy requirements, creating additional work for both teams and delays in activities. These security and technological challenges created a barrier to establishing consistent workflows between CCTSI and county staff and took time to resolve. For example, PHI CCTSI staff were hindered in sending out letters to cases because PHI staff were not able to download protected health information directly onto their computers due to requirements laid out in the business associate agreement (BAA). Eventually, the ability for CCTSI to conduct this work within CalCONNECT resolved these issues. Developing protocols and workflows and ensuring these requirements are understood from the onset may help expedite compliant workflows and avoid potential security breaches for future projects.

An Emerging Public Health Workforce
TH staff provided subject matter expertise, cultural and linguistic proficiency, and high-quality services to county health departments. While a goal of PHI and their Workforce Development program was to set employees up to be competitive candidates for county employment, challenges with job eligibility requirements persisted. Many staff who had been providing critical services during their tenure at PHI were ultimately not eligible to apply for equivalent jobs with the county due to a lack of required educational attainment or experience. To address this, an ongoing partnership with California Department of Public Health (CDPH) or other departments at the State of California for emergency preparedness may serve to improve both the state's and PHI's ability to respond to future emergencies, or other non-emergency partnership opportunities that meet the unique needs of county health departments.

> "You can't change civil service in the middle of a crisis.
> That's a longer-term strategy." – Senior Staff Member

Project Coordination and Management
People at various levels reported a lack of understanding about the organizational structure of TH. Though there were eventually several iterations of an organizational chart distributed among TH staff, some uncertainty remained. For example, some felt that operations decisions were coming from a range of individuals, versus from a single clear source. The lack of understanding around the authoritative source of decision-making and information sharing created inefficiencies in the program. Overall, the lack of clarity around roles and responsibilities led to confusion and redundancy. The creation and use of a logic model and organizational chart, and a review and written documentation of roles and responsibilities at the onset of a program, may help mediate issues in the future. Clarifying the goal of the program (e.g., serving county COVID-19 needs) may help to redirect and align program priorities for all parties.

Transitioning CCTSI Staff
CCTSI staff transitioned with relative frequency between roles (e.g., moving from Community Care Specialist to Supervisor) and between jurisdictions (e.g., between counties). These transitions often bore a high administrative burden to both the staff member and PHI. Often when staff changed roles or (remote) job locations they were required to re-apply to a publicly posted position and complete recruitment as if they were an external candidate). This added administrative burden (e.g., time and resources) and added delays to the hiring process. This created challenges with handling surges and responding quickly to evolving county needs.

> "HR did not let us [operate] interchangeably with our Pacific Northwest
> colleagues. So that was another real detriment was we had to open up
> positions and hire even if it was the same job, which was really clunky. So
> if we had a contact tracer that wanted to work in Oregon, they'd have to
> apply for that Oregon position." – Senior Staff Member

CalCONNECT

The CalCONNECT platform brought its own set of challenges. CalCONNECT was developed early in the pandemic to facilitate California's COVID-19 response and continued to be refined over time. The process for TH staff to access the platform was inconsistent and confusing, especially with CDPH not allowing TH staff to operate on the platform for several months at the outset of the project. Upon gaining access to the system, TH staff struggled to gain the level of access they needed to effectively provide integrated services to the county.

In terms of CI/CT work, interviewees felt that Community Care Specialists would have improved opportunities to build trust with cases if they were able to call with from a local area code, which the CalCONNECT platform did not allow for. The inability to send personalized texts or to provide local return call numbers was another reported barrier to building trust.

For the program management, inconsistent or lower-level access to CalCONNECT meant that metrics around the CCTSI's performance were not immediately available or easily interpreted. This presented a challenge when TH needed to report on progress to external partners.

> "In gaining access, we could get access to the platform, but we weren't allowed to access to move around or set up our reports... So there were 450+ contact tracers. And the only way for me to identify them on a daily basis because I couldn't...download a record myself, was every day to go in, and go through that list and look for my team members and isolate [their cases] for the day" – CI/CT Staff Member

Impact on County Workforce Capacity

- **Increasing Workforce Capacity with Quality Staffing Services.** The contact tracing, case investigation, epidemiological, and resource coordination skills provided critical staffing services during the pandemic. Yet the burden on San Bernardino County to rapidly ramp up CCTSI staff on county workflows delayed some activities.
- **Improving County Processes.** CCTSI services moved well beyond merely staffing, they contributed to workflow improvements and provided information from other counties to improve overall operations in San Bernardino County.
- **Responding to County Priorities.** While the relationship between CCTSI and the county was mostly positive, some report that CCTSI used a top-down approach at times, rather than prioritizing the county's needs.

Increasing Workforce Capacity with Quality Staffing Services

A major accomplishment of CCTSI was the increase in San Bernardino County's workforce capacity to address the COVID-19 pandemic. Interviewees generally felt that CCTSI and San Bernardino County had a strong partnership, and that the county was appreciative of CCTSI's support.

At the onset of the pandemic, San Bernardino had an immediate need for the types of services that TH was offering. However, upon contract execution, county staff were slow to fully utilize PHI support; some speculated this was due to a lack of county staffing, funding, and/or capacity to ramp up partnerships. Building trust between county and PHI teams was a critical first step with the county's eventual enthusiasm in receiving and utilizing PHI support and staffing services.

> **CCTSI was able to successfully increase the capacity of the county to effectively address the COVID-19 pandemic in their jurisdiction.**

> "Our role was to incorporate the data they were receiving, and have our teams incorporate into their teams, they were also in a moment of expansion. I'm not sure what number they started with, but they were looking to hire 100 more contact tracers right when we were coming on board. So it was a bit of a shaky start, [to] say the least... it was more a sense of maneuvering to have them open up a little more, gain their trust, and start releasing their work to us." – CI/CT Staff

The diversity and language proficiency provided were an asset to San Bernardino County and proved to be an efficient and effective strategy for local contact tracing. This is especially true of the Spanish-speaking CCTSI staff, as San Bernardino County has a high proportion of Spanish-speaking residents. Overall, CCTSI was able to successfully increase the capacity of the county to effectively address the COVID-19 pandemic in their jurisdiction.

Improving County Processes

CCTSI provided more than CI/CT staffing services to the county. Many mentioned the improvements made to county processes because of suggestions from CCTSI managers, supervisors, and micro-teams who were actively working in the county's systems. TH also offered resources beyond contact tracing – including connections and learnings from work with other counties and additional processes and workflow modifications to consider, which were valued by the county staff.

"…[Tracing Health staff] were always really engaged supervisors and managers, and they were asking really great questions. So every week … these questions just prompted us to address those things in our workflow and anticipate those kinds of changes, which I think made our program a little bit more efficient, and hopefully more effective." - County Perspective

Responding to County Priorities

While most reports of the relationship between San Bernardino County and TH were positive, there were exceptions related to responding to county priorities. Eventually the county needed to transition away from CI/CT functions to vaccine and recovery services (e.g., the county's Persistent Symptoms survey). Interviewees reported that CCTSI used a top-down approach, telling the county how things would happen rather than asking and problem solving together, which was frustrating for some. CCTSI might have instead taken steps to understand the inner workings of the county and tailor their services accordingly in the later phases of the project.

"I think it's just that we have to be flexible and be willing to listen to what the community needs and how we can support them. That's the way I think Tracing Health will be the most successful." – Senior Staff Member

Diversity of CCTSI Staff

- **Increasing Workforce Capacity with Staff Diversity.** CCTSI provided a diverse workforce to support San Bernardino County's COVID-19 response efforts.
- **Community Impact Hiring.** TH prioritized impact hiring, focusing on communities hardest hit by COVID-19 and focusing recruitment efforts to prioritize staff who reflected the spoken language(s), racial diversity, and cultural nuance(s) of San Bernardino County residents.
- **Language and Culture.** CI/CT staff were able to effectively build trust and conduct quality services because of impact hiring and the diverse workforce provided by TH. Maintaining an active list of language capacities across the organization reduced reliance on the language line and improved service offerings.
- **Geographic vs. Community Impact Hiring.** TH discovered it was not critical to hire from the community in which they were working geographically, rather they emphasized hiring (remote staff) from the communities hardest hit by the pandemic.

Increasing Workforce Capacity with Staff Diversity

CCTSI increased San Bernardino County's workforce capacity to provide culturally competent and linguistically appropriate services. CCTSI Community Care Specialists were representative of the communities hardest hit by COVID-19. There was representation in language, age, educational level, gender, race, and ethnicity. This diverse workforce effectively supported San Bernardino County's COVID-19 response efforts.

While San Bernardino County had the greatest need for services in English and Spanish, Mandarin and Cantonese speakers were also requested. Of the CCTSI staff who spent at least six months at San Bernardino County[5]:

- 91% were at least bilingual; some spoke more than two languages.
- 79% of bilingual staff spoke Spanish.
- 21% spoke a language other than Spanish.
- One staff person spoke Mandarin.
- No staff spoke Cantonese.

[5]*Internal demographic data provided by Tracing Health.*

CCTSI provided a diverse workforce to support San Bernardino County's COVID-19 response efforts in a way that was effective and responsive. The TH staff were quite diverse. This high level of diversity did not extend to more senior staff levels, and some expressed a desire to prioritize diversity of senior staff in future efforts.

> "I would have liked to see goals for the EBCF award around hiring targets, including at supervisory and management levels, which is where I think things really shrunk down in terms of the diversity of the team."
> – Senior Staff Member

> "I think [the diversity goal] was achieved... our staff is incredibly good. They are diverse. They're from all ages, all races, all education levels. And they did a great job. And we have some of the finest staff I've ever worked with."
> - Senior Staff Member

CCTSI increased San Bernardino County's workforce capacity to provide culturally competent and linguistically appropriate services.

Impact Hiring and Recruitment

Representation and staff diversity was primarily achieved through the PHI Talent and Recruitment Team's active recruiting efforts. These efforts went beyond general online recruitment postings; the team engaged with community contacts and organizations to actively recruit from the communities heavily impacted by COVID-19. The Talent and Recruitment team also adapted their internal policies over time, for example posting salary ranges in response to team feedback (once the policy was first approved by Human Resources).

Language and Culture

Providing services in the languages spoken by the target audience is critical to providing effective services. Many participants mentioned that speaking the language of the case or contact helped to build trust quickly and was more reliable than using the language line. Interviewees reported that the language line often took twice as long and reduced the opportunity for trust-building, as there was a third person present on the call.

A limitation of the project was the lack of broad awareness of San Bernardino County or CCTSI Community Care Specialists language capacities outside of a micro-team. There did appear to be some generalized lists of all staff language capacities, however, efforts were not standardized across the organization. Future efforts may consider standardizing and maintaining a comprehensive list of staff languages, or a way to connect with these staff directly within CalCONNECT (or other platform) to keep work internal as much as possible. This can reduce staff utilization of the language line, which is not as effective at building trust and rapport with cases.

A pre-survey was sent out by the county which allowed CI/CT staff to identify the language the case or contact most preferred for conducting the interview, and therefore proactively assign cases based on primary language. Future similar efforts may include improving language pre-survey completion rates to assign staff appropriately and reduce reliance on the language line.

Culture also played an important role in CI/CT, as well as project design and implementation. Cultural representation contributed to a sense of pride in the organization and was felt by some to be part of the commitment to the work of TH and directly supporting their community. Most importantly, cultural context and connection helped to make cases and contacts feel more comfortable. CCTSI staff were able to advise the TH team on culturally appropriate responses to situations that arose, guiding organizational policies with a culturally sensitive lens.

> "[It] absolutely made a difference for people to talk to somebody who spoke their language, absolutely made a difference to have the people on the phone, like, sitting in this context of what communities of color are dealing with, from their own lived experience…. A really great example of this is the counties ask us to say, 'if you have COVID, to protect other members of your family, please isolate yourself in a room in your house.' And … for families with like, 12 people in one home, or one two-bedroom apartment, that's not practical advice. And that is feedback [received from staff] that is very appreciated and extremely on point. And that is how you get an isolation and quarantine hotel for multi-generational families, or just combined households." – Senior Staff Member

Geographic vs. Community Impact Hiring

Initially, TH strove to hire directly from the communities where contact tracing was occurring. The Talent and Recruitment Team prioritized candidates in areas most impacted by COVID-19, as well as those with language and call center skills. Workforce development considerations played a role in these efforts. TH hypothesized that CI/CT staff hired and trained in a specific geographic jurisdiction could be positioned as a competitive candidate who may transition to county employment when the TH program concluded.

However, TH discovered it was not critical to hire from the community geographically, but rather to hire (remote staff) from communities hardest hit by the pandemic. This adjustment was due in part to the frequency at which staff were re-deployed to other counties, as well as the remote nature of the work. While having a local telephone number was helpful, interviewees reported that conducting CI/CT duties from outside the specific community was not a barrier to building trust and providing culturally and linguistically relevant services. This benefited the project as staff were able to transition between county health departments to address and support COVID-19 surges.

> "I know they were really intentional, when they first started hiring, that they were only going to hire from the community in which they're going to be placed. But that just is not a doable recruitment plan, because COVID-19 is constantly shifting... I think they moved from that, but their recruitment priority to hire from disenfranchised communities was always there." – Senior Staff Member

Training and Capacity Building

- **Training and Onboarding.** TH developed a strong and robust training program which prepared staff to conduct COVID-19 CI/CT, counseling, and monitoring. This multi-week training program was informed, in part, by a needs assessment deployed to all TH staff in 2020.
- **Transitioning to Training in Cohorts.** Training in cohorts vs. onboarding each new staff person individually was an effective strategy that streamlined processes.
- **Future Training Considerations.** Suggestions for future improvements to the training program include: practical application training time, onboarding supervisors ahead of their teams, regular post-training check-ins with staff, consistent training for staff who switch roles, and targeted training in clinical or county integrated processes only as job duties require.

Training and Onboarding

TH provided all employees with comprehensive training, including CI/CT training through the Johns Hopkins University (JHU) contact tracing modules. The training and onboarding program for new hires evolved over time, with new components like a supervisory-specific track for training added later. TH quickly learned what worked, what needed improvement, and where additional needs could be addressed by training and onboarding procedures. A training needs assessment was sent to all staff resulting in several new components being added to the training program based on assessment findings, including but not limited to:

> **Tracing Health provided all employees with comprehensive training**

- Information security
- HIPAA training
- Technology (Microsoft Office, Zoom, Microsoft Teams, regionally specific telephone equipment), and
- Mental health and self-care

Overall, most staff felt TH created a positive training environment and created time for staff members to interact. Staff agreed that the training and onboarding procedures coordinated by TH set employees up for success in San Bernardino County. However, CDPH expressed disappointment that TH did not utilize their internal training system (Virtual Training Academy).

> *"I've never worked anywhere with such a robust training program.... They were phenomenal. They were super enthusiastic, they always came smiling, they made you want to participate in these trainings. And there were always fun ways for people to learn... The really positive work environment of lifting people up to better them, it fed into every single avenue of CCTSI." - Senior Staff Member*

With respect to required trainings, the JHU modules were mentioned by many as being particularly useful. The CDPH CalCONNECT training was effective but was found to be "dry." The mental health and self-care training provided by PHI was cited as valuable. However, some CI/CT staff reported not being aware of these resources until later in the program.

Transitioning to Training in Cohorts

TH transitioned to training and onboarding in cohorts of 30-40 individuals. This shift helped make training and onboarding more efficient, as the groups were small enough to interact and build relationships but large enough to be an effective use of the training team's time.

> "The training was really good, really efficient. PHI handled our onboarding really well, set us up for success for getting into these cases…. And then our training team at PHI was always there. If you had any questions, follow up, or if you ever needed more training, always there." - CI/CT Staff Member

Future Training Considerations

One consideration for future training efforts is to include additional practical application training time. While this opportunity was provided to some extent, staff felt that additional time spent on practical skill building through mock interviews, shadowing, reverse shadowing, and simulations would be helpful. Because calls could vary so widely, it was important that staff were able to get this practical exposure in training. One individual mentioned that shadowing county employees in addition to TH staff would be beneficial.

Regular, ongoing post-training check-ins from supervisors and/or managers can help identify opportunities for training refreshers. Ensuring information, protocols, and procedures are understood and retained after training can help improve service quality.

Providing the same level of training for staff who switch roles that are offered to new hires can improve confidence, competence, and service delivery. Many staff felt that they did not receive adequate training when they switched roles at TH, for example, from a Community Care Specialist to a Community Outreach Specialist or Vaccine Ambassador. Additionally, some mentioned that it would be helpful to hire and train supervisors first, so they are ready to support new teams onboarding to PHI.

While staff were trained in both clinical and county-integrated procedures, they typically were only assigned to use one or the other. If they were re-deployed from county to clinically integrated (or vice versa), and significant time had passed, a retraining or refresher training was necessary. It may be more efficacious to train only on the specific platforms they will be using for county or clinical work. Including both trainings at the onset was felt to be an ineffective use of time given the need for a refresher.

Data Management

- **CalCONNECT.** Access to CalCONNECT was a consistent challenge throughout the program (e.g., obtaining access generally, the proper level of access, etc.).
- **Standardization of Performance Metrics.** Performance metrics were inconsistent across the TH Program. This is due in part to competing priorities of funders, county or clinical workflows, and data collection platforms. Decisions regarding data use and performance metrics should be established early in the program to avoid complications later.
- **Performance Metrics for CI/CTs.** Considering context and limitations can improve the process of establishing performance metrics. This can include accounting for the human experience of some activities when identifying appropriate metrics and recognizing that calculations of data points may vary across platforms.

CalCONNECT

Access to and use of CalCONNECT presented challenges throughout the program. This created delays in workflows, inefficiencies, and frustration at multiple levels.

Standardization of Performance Metrics

Performance metrics were not initially standardized across Tracing Health. Metrics collected, reported, and/or completed were influenced by counties, funders, personnel, and other contexts. Micro-teams often had their own way of tracking progress and maintained a variety of spreadsheets. Team priorities varied as well: some teams prioritized the number of cases that had been closed, while others reviewed the number of hours spent on calls with cases. Further, many states and/or counties have their own requirements and workflows for metrics, platforms, reporting, and quality improvement. These inconsistencies created significant challenges for PHI, since they were responsible for providing the funder with regular reports and accommodating additional reporting requests. Eventually a Quality Assurance Plan was created and implemented which worked to resolve some of these issues, focusing on quality and completeness of data.

Developing standardized metrics was further complicated because TH staff were dealing with multiple systems. The county-integrated model had staff embedded within a county where outside metrics may not align with county workflows or processes. Metrics may be calculated differently on different systems, which is an important consideration when interpreting data. Transparency regarding how these calculations were made on different systems was sometimes available, but other times could not be obtained. In addition, at times program staff proceeded with decision-making before all information on metrics had been obtained, such as data dictionaries.

San Bernardino County was unable to provide a flat file transfer, which created a challenge in data governance and handling between the two partners. This issue was never resolved, leading to frustration and inefficient manual input procedures. Overall, the inability to view and understand the backend data components of CalCONNECT, as well as the varying and inconsistent degrees to which PHI staff could access CalCONNECT, impacted TH's ability to calculate performance metrics.

These challenges arose throughout the program in part because data decisions were made reactively and not proactively. In the future, considerations around what data will be collected, as well as how it will be obtained and used, should occur as early in the program as possible to avoid complications later.

Performance Metrics for CI/CTs

The content and context of the CI/CT calls cannot be overstated. Community Care Specialists were regularly engaging with people experiencing loss, grief, fear, and/or uncertainty. Many were also experiencing anger, sadness, and distrust in the public health system. Interviewees described how challenging the COVID-19 CI/CT calls could be and how it took time to build trust, which was a key ingredient for a successful call. Performance metrics should acknowledge and account for the human experience of conducting these calls. Setting firm goals for call completion rates can devalue

> **Performance metrics should acknowledge and account for the human experience of conducting these calls.**

the work of Community Care Specialists. This was especially problematic because it both contradicted the messaging of the impact hiring efforts and obfuscated the importance of connecting with communities on a cultural and linguistic level. Contact tracing calls are "not sales calls," as one interviewee put it, and their respective metrics should reflect the relational complexity of the work. One key informant was deeply appreciative that San Bernardino County appeared to be more concerned with the quality, rather than the quantity, of the calls.

> "How do we have quality from the perspective of the county, as well as the perspective of the people who are being contacted?" – Senior Staff Member

> "I think internally with PHI, there was always that challenge between leadership wanting more calls done. And us pushing back saying, hey, like, the calls are tough." – CI/CT Staff Member

For future projects, additional clarity and communication around performance goals and metrics can help ensure CI/CTs are meeting expectations. The opportunity for CI/CTs to provide feedback on performance goals and metrics can ensure that they are appropriate. Establishing these metrics, and adjusting as necessary, at the onset of a program can ensure teams are moving towards the same goal.

CONCLUSION

The CCTSI San Bernardino County integrated project met its goals of recruiting, training, hiring, and maintaining a remote CI/CT staff to support the county's COVID-19 response efforts. There were many unique aspects of this project, including the COVID-19 pandemic context, novel relationship structures, and the rapid pace of program design and implementation. Among the most successful aspects of program design and implementation were the rich diversity in staff and a robust training program, which prepared micro-teams for the demanding work of CI/CT. Factors contributing to the success of the program included the integration and overall positive relationship with the county and dedicated teams for training and recruitment. Challenges included the shifting and persistent pressures of the pandemic, a lack of definition and communication around roles and responsibilities among TH staff at various levels and between different partners such as the county and funder, administrative burden of some program activities, and challenges with data security and the CalCONNECT platform. This evaluation presents an opportunity to highlight important learnings from this project and consider how to carry them forward to future projects.

METHODS

| Document analysis | Collect data through interviews and focus groups (conversation map) | Code for themes in Dedoose | Analyze data using framework analysis |
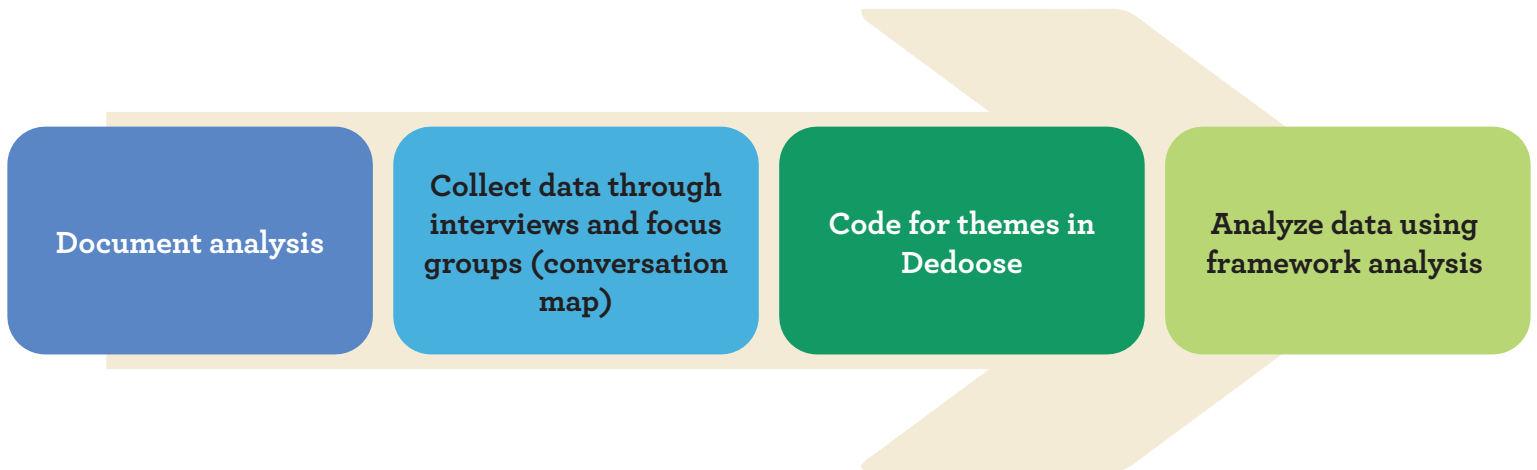
Data Collection Strategies

Primary data was collected through key informant interviews (KIIs) and focus groups to answer evaluation questions around project accountability, lessons learned, barriers and facilitators, and recommendations for future projects.

Key informant interviews were divided into two groups: senior staff and CI/CT staff. Interviews were conducted virtually over Zoom, lasted 60-90 minutes, and were recorded with participant consent.

The first group of KIIs were conducted with senior leadership, including senior representatives from TH program staff, funders, and partners, all of whom were closely involved in the design of the San Bernardino County integrated project. The purpose of this initial KII series was to gather information about the project design, implementation, and outcomes from a leadership perspective. Initial KIIs described project objectives, provided context and background on the project, and illuminated any factors which influenced the design of the project.

The second group of KIIs included staff involved in implementation of the program "on the ground," including Community Care Specialists, Supervisors, Managers, Community Outreach Specialists, as well as CCTSI and San Bernardino County Department of Public Health staff involved in day-to-day operations. The purpose of this second KII series was to gather information about the project implementation and outcomes from the perspective of the staff engaged in day-to-day CI/CT and supportive efforts.

A **focus group** was held with a mix of program participants from all stakeholder groups following the KII series. Participants included senior staff members, a Community Outreach Specialist, a Community Care Specialist, and a supervisor. The focus group used conversation mapping exercises to learn more about barriers and facilitators of the project. The focus group lasted 90 minutes, was conducted virtually over Zoom, and was recorded with participant consent. The resulting Mural artifact which contained the conversation map content was analyzed for themes.

A **qualitative document review** was conducted using project documents provided by the CCTI team such as meeting minutes, administrative records, and reports.

Data Sources and Indicators

25 INTERVIEWS
(15 senior staff, 10 CI/CT staff)

439 DOCUMENTS

1 FOCUS GROUP (mixed)

Data sources included 25 interviews (15 senior staff and 10 CI/CT staff), one focus group, and 439 documents.

Data were coded for themes in Dedoose[6] and analyzed using a framework analysis[7,8,9] approach in Microsoft Office software. Framework analysis was the analytic approach selected for this evaluation due to the specific nature of questions around the project's process and outcomes, the limited time frame of the evaluation, and the sampling frame being limited to key informants with specific roles in project design and implementation.

Once data collection and analysis were complete, redundancies were identified between certain evaluation questions. Therefore, this report combines the findings from three questions (listed below) into two sections: 1) Successes in Project Design & Implementation, and 2) Challenges in Project Design & Implementation. Evaluation questions consolidated therein include:

- Which aspects of the project implementation did participants feel were most and least successful?
- Which aspects of project design were most and least successful?
- What barriers and facilitators were encountered in the implementation and ongoing operations of the project?

Interim findings were presented to key stakeholders at the Public Health Institute. The final report was refined based on feedback gathered during that meeting.

Limitations

The San Bernardino County Integrated project and TH as a whole evolved significantly over time. The authors of this report have done our best to ensure that the findings included herein are up to date, but key informants may have had very different experiences depending on when they began working with TH.

This evaluation was designed to be qualitative in nature and does not attempt to quantify the impacts of the CCTSI's work. The evaluators had no comparison group by which to assess differences between the San Bernardino County project and other CCTSI projects. The evaluation was conducted over a short time frame, which was after many staff had departed the organization. These limitations mean that evaluation findings should be considered as a partial piece of the full San Bernardino CCTSI story and cannot be generalized across all CCTSI projects.

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[6]*SocioCultural Research Consultants LLC 2018.*
[7]*Ritchie, J. & Spencer, L. 1994. Qualitative data analysis for applied policy research" by Jane Ritchie and Liz Spencer in A. Bryman and R. G. Burgess [eds.] "Analyzing qualitative data", 1994, pp.173- 194.*
[8]*Srivastava, A. & Thomson, S. B. (2009). Framework Analysis: A Qualitative Methodology for Applied Research Note Policy Research. JOAAG, Vol. 4. No. 2*
[9] *Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013.) Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Medical Research Methodology, 13(117). https://doi. org/10.1186/1471-2288-13-117.*

ACKNOWLEDGEMENTS

APPENDIX A: DATA SOURCES & INDICATORS

The table below links each evaluation question with associated data sources and indicators.

In general, success will be determined by a positive perception or change in indicators. As this is a qualitative evaluation, indicators will often rely on the overall perception of participants to determine the direction and magnitude of impact.

Evaluation Questions and Associated Data Collection and Indicators

Evaluation Question	Data Sources	Indicators
Project Accountability		
How, and to what extent, has the project contributed to the San Bernardino County DPH's capacity to respond to the ongoing COVID-19 pandemic?	Key informant interviews, document review	Perceived success of project efforts Change in number of individuals contacted Change in workload of San Bernardino County DPH staff
How, and to what extent, did training offered to CCTSI CT/CI staff prepare them to conduct COVID-19 CT/CI, counseling, and monitoring?	Key informant interviews, document review	Hours of training received Topics of training received Perceived readiness and ability of CT/CI staff
Which aspects of the project implementation did participants feel were most and least successful?	Key informant interviews	Perceived success of implementation Perception as to whether project was implemented as intended
How, and to what extent, was desired demographic diversity of the CCTSI staff (e.g. age, ethnicity, gender, language distribution) achieved?	Key informant interviews, document review	Diversity of ages, ethnicities, genders in CT/CI staff Number of CT/CI staff who speak Spanish, Cantonese, Mandarin, other languages

Evaluation Question	Data Sources	Indicators
Project Improvement		
What recommendations can be offered to improve future county-integrated CT/CI efforts?	Key informant interviews	Identification of ways to improve the project, lessons learned Identification of project elements changed with subsequent county-integrated efforts
What performance monitoring and quality improvement processes should exist in future implementations?	Key informant interviews	Identification of additional processes Utility of existing systems
Knowledge generation & transfer		
Which aspects of project design were most and least successful?	Key informant interviews	Perceived progress toward project goals
What barriers and facilitators were encountered in the implementation and ongoing operations of the project?	Focus group	Identification of barriers, facilitators, local context factors
What unanticipated positive and negative workforce capacity outcomes have arisen from the project?	Key informant interviews Focus group	Identification of unexpected positive and negative outcomes Perceived project impact on unexpected outcomes

APPENDIX B: CI/CT STAFF KEY INFORMANT INTERVIEW GUIDE

INTERVIEW DESCRIPTION	INTERVIEW OVERVIEW
Date of interview: Name of interviewer: PTID: Organization represented:	Duration: 60-90 minutes 1. Intro & General (10 mins) 2. Project Outcomes (45 mins) 3. Closing (5 mins)

INTRODUCTION
Thank you again for taking the time to speak with us today. As we discussed via email, the goal of this evaluation effort is to better understand strengths, barriers, achievements, and recommendations for the San Bernardino county-integrated COVID-19 contact tracing and case investigation (CT/CI) effort. The Tracing Health team hired the Population Health Innovation Lab (PHIL), a separate program of the Public Health Institute, to conduct this evaluation.

We're excited to learn more about your experiences and thoughts about this project.

What to Expect:
- Your participation is voluntary, and you are free to skip any questions that you do not want to answer, for any reason.
- Your responses will be kept confidential. Responses will not be shared in an individually identifiable way outside of the research team unless you provide express written consent.
- The conversation will last about 60 to 90 minutes. You are welcome to take a break or stop the interview at any time.
- If we record this interview (with your permission), the recording will be used only to verify the notes we're taking during the call and to capture any important quotes accurately.

We included a summary of your rights as an evaluation participant in the initial email we sent you.
Do you have any questions for me about that document?
Do you have any other questions before we get started?
Do we have your permission to record this interview?

****START RECORDING****

GENERAL
Throughout the interview we will refer to the California Contact Tracing Support Initiative as CCTSI. Contact tracing and case investigation are sometimes referred to as CT/CI.
To start, I'd like to learn more about you.
1. What is your role within [organization]?

2. What is/was your role in the CCTSI San Bernardino County integrated CT/CI project?
Possible probes: What work did/do you do for Tracing Health?

3. Tell me about your day-to-day work as a [role, e.g., CT/CI, manager, supervisor, resource coordinator]?
Possible probes: What types of work did you do in a given week? What tasks did you focus most on? How was work distributed across the staff? How much interaction did you have with San Bernardino County staff, including those from other outside agencies supporting?

PROJECT OUTCOMES
The following questions ask about project outcomes and lessons learned which might be applied in future efforts of this nature.

The goals of the CCTSI were to support San Bernardino County's contact tracing efforts with the following:
1. *Maintain a fully remote contact tracing staff which will conduct case investigations, case contacts, COVID-19 counseling, and daily monitoring in alignment with CDPH/State of California metrics.*
2. *Recruit and hire staff to support these efforts, giving priority to applicants in areas hardest hit by the COVID-19 pandemic, bilingual candidates speaking Spanish, Cantonese, and Mandarin, and those located in the San Bernardino County and Inland Empire region.*
3. *Execute a seamless onboarding and training process for incoming contact tracing staff to ensure successful entry into the contact tracing program.*

Please consider these goals when answering the following questions.

4. Does what I just read align with your understanding of the project's goals? If not, why not?

5. Which CT/CI staff trainings do you know most about? How did you engage with these trainings (attendee, heard about from others, etc.)
Possible probes: Did you participate in any trainings offered? Why or why not?
 a. Which trainings were most helpful in preparing the CT/CI staff for their day-to-day work? Which were not as useful?
 Possible probes: How, if at all, did you use the information you learned in your work?

6. To what extent did you see diversity reflected in the CCTSI workforce?
Possible probes: How often were the demographics of people being contact traced represented in the CCTSI staff?
 a. How do you think the level of demographic diversity of CCTSI staff influenced project outcomes?
 Possible probes: Did you feel that individuals were more forthcoming with information in their native language, or with someone demographically like themselves?

7. Imagine the CCTSI project had not been implemented in San Bernardino. What might have looked different about the county's COVID-19 pandemic response?
Possible probes: In what ways did the CCTSI project impact the county's COVID response? What, if any, influence did the CCTSI's involvement have on distribution of tasks?

8. What impact did the CCTSI's involvement in San Bernardino County's CT/CI efforts have on the existing County employees involved?
Possible probes: Were there changes to the work environment or workload? In what ways did the CT/CI micro-teams impact San Bernardino County's workforce? Which of these were expected? Unexpected?

9. Were there any factors that influenced the contact tracing and case investigation efforts in San Bernardino County that we should know about?
Possible probes: How was San Bernardino's local context unique? What external elements influenced this project's implementation and operations? What barriers or facilitators were encountered in the project's CT/CI efforts?

10. What advice would you give to teams leading other projects of this nature?
Possible probes: If you were to do this again, what would you change? What would you keep the same? What do you wish you had known when this project began?

CLOSING
11. Is there anything else you want to share?

12. Who else should we speak with to learn more about the San Bernardino County integrated CT/CI project?

13. Are you interested in participating in a focus group discussion for this evaluation?

14. Do you have any questions for me?

Thank you for taking the time to inform this evaluation. We appreciate your time and insights.
You will receive a $25 gift card as small thank you for your participation.

END INTERVIEW

APPENDIX C: SENIOR STAFF KEY INFORMANT INTERVIEW GUIDE

INTERVIEW DESCRIPTION	INTERVIEW OVERVIEW
Date of interview: Name of interviewer: PTID: Organization represented:	Duration: 60-90 minutes 1. Intro & General (10 mins) 2. Project Outcomes (45 mins) 3. Closing (5 mins)

INTRODUCTION

Thank you again for taking the time to speak with us today. As we discussed via email, the goal of this evaluation effort is to better understand strengths, barriers, achievements, and recommendations for the San Bernardino county-integrated COVID-19 contact tracing and case investigation (CT/CI) effort. The Tracing Health team hired the Population Health Innovation Lab (PHIL), a separate program of the Public Health Institute, to conduct this evaluation.

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- Your responses will be kept confidential. Responses will not be shared in an individually identifiable way outside of the research team unless you provide express written consent.
- The conversation will last about 60 to 90 minutes. You are welcome to take a break or stop the interview at any time.
- If we record this interview (with your permission), the recording will be used only to verify the notes we're taking during the call and to capture any important quotes accurately.

We included a summary of your rights as an evaluation participant in the initial email we sent you.
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Do you have any other questions before we get started?
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****START RECORDING****

GENERAL
Throughout the interview we will refer to the California Contact Tracing Support Initiative as CCTSI. Contact tracing and case investigation are sometimes referred to as CT/CI.
To start, I'd like to learn more about you.
1. What is your role within [organization]?

2. What is/was your role in the CCTSI San Bernardino County integrated CT/CI project?
Possible probes: What work did/do you do for Tracing Health?

3. What was the main goal of the CCTSI San Bernardino County integrated project, from your perspective?
Possible probes: What did you hope would be accomplished at the end of this project?

PROJECT OUTCOMES
The following questions ask about project outcomes and lessons learned which might be applied in future efforts of this nature.

The goals of the CCTSI were to support San Bernardino County's contact tracing efforts with the following:
1. *Maintain a fully remote contact tracing staff which will conduct case investigations, case contacts, COVID-19 counseling, and daily monitoring in alignment with CDPH/State of California metrics.*
2. *Recruit and hire staff to support these efforts, giving priority to applicants in areas hardest hit by the COVID-19 pandemic, bilingual candidates speaking Spanish, Cantonese, and Mandarin, and those located in the San Bernardino County and Inland Empire region.*
3. *Execute a seamless onboarding and training process for incoming contact tracing staff to ensure successful entry into the contact tracing program.*

You mentioned that you also saw [see Q3] as a goal of the project.

Please consider these goals when answering the following questions.

4. Does what I just read align with your understanding of the project's goals? If not, why not?

5. Were you involved in the recruitment and hiring process for CCTSI staff?
   a. If yes, what did the recruitment and hiring process look like?
   Possible probes: What worked well and what could be improved? How easy or difficult was it to recruit desired diversity of staff? Why?

6. How, and to what extent, was desired demographic diversity of the CCTSI staff (e.g., age, race, ethnicity, gender, language distribution) achieved?
   a. How do you think the level of demographic diversity of CCTSI staff influenced program outcomes?
   Possible probes: To what extent were the CCTSI staff representative of the COVID-19 cases and contacts they were calling?

7. What elements of the onboarding and training process were most effective? What would you change, looking back?
Possible probes: What barriers and facilitators did you encounter in onboarding and training CT/CI staff? Are there any trainings you feel were missing?

8. Where did the project implementation plan succeed and where were adjustments needed? Why?
Possible probes: How did actual project implementation match up with planned project implementation? Which aspects of the project implementation were most and least

successful? What factors shaped the implementation and ongoing operations of this project?

9. What workforce capacity outcomes (positive or negative) have arisen from the project?
Possible probes: In what ways did the CT/CI micro-teams impact San Bernardino County's workforce capacity? Which of these were expected? Unexpected?

10. Were you involved in the performance monitoring or quality improvement of this project?
    a. If yes, what performance monitoring and quality improvement processes were used in San Bernardino county-integrated efforts?
    Possible probes: What performance monitoring and quality improvement processes should exist in future implementations?

    b. If yes, what would you use these processes again if you were to implement a similar project in the future? What would you change?

11. What advice would you give to teams leading other projects of this nature?
Possible probes: If you were to do this again, what would you change? What would you keep the same? What do you wish you had known when this project began?

CLOSING
11. Is there anything else you want to share?

12. Who else should we speak with to learn more about the San Bernardino County integrated CT/CI project?

13. Are you interested in participating in a focus group discussion for this evaluation?

14. Do you have any questions for me?

Thank you for taking the time to inform this evaluation. We appreciate your time and insights.
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<div align="center">****END INTERVIEW****</div>

*Triggers for conversation maps included "Facilitators" and "Barriers"

The Population Health Innovation Lab (PHIL) designs, catalyzes, and accelerates innovative approaches that advance health, well-being, and equity.

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