Leveraging an Academic-Practice Partnership to Improve Maternal and Child Health Outcomes in North Carolina

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BACKGROUND In 2016, the North Carolina Division of Public Health (DPH) launched the Improving Community Outcomes for Maternal and Child Health (ICO4MCH) program to provide 5 local health departments (LHDs) with financial resources and technical assistance to address 3 aims: improve birth outcomes, reduce infant mortality, and improve health for children from birth to 5 years.

METHOD: State legislation established an academic-practice partnership between NCDPH and the University of North Carolina at Chapel Hill (UNC) to provide program evaluation and implementation coaching to LHDs. ICO4MCH used a collective impact framework, principles of implementation science, and a health equity approach to implement evidence-based strategies to address the program’s aims.

RESULTS: A shared measurement system was developed by an evaluation stakeholders group led by the NCDPH and UNC in which LHDs reported data on a quarterly basis and the evaluators returned reports to drive improvements. Structured assessments and technical assistance provided by implementation coaches helped grantees address barriers to implementation including cultivating and sustaining a diverse community action team, addressing staff turnover, and using data to drive improvements.

LIMITATIONS: It was challenging for grantees to balance community needs and build partnerships in the first year while integrating data from multiple assessments into action plans to meet the performance measures. It was necessary to streamline assessments and reduce indicators to make data more actionable.

CONCLUSION: An academic-practice partnership was integral to successful implementation of the ICO4MCH program and may serve as a model for moving evidence-based maternal child health programs to practice in LHDs.

Local health departments (LHDs) play a central role in providing maternal and child health services in the public health system and are increasingly collaborating with academic institutions to advance evidence-based public health [1-3]. Academic-practice partnerships typically represent a formal affiliation between an academic institution and a public health practice organization [4]. Luo and colleagues estimated that 82.4% of LHDs engaged in partnerships (ie, networking, coordinating, cooperating, collaborating) to advance maternal and child health, however, only 27.4% of these partnerships represented collaborations [5]. There is a need to understand how LHDs successfully leverage partnerships to advance evidence-based maternal and child health [5].

In an effort to improve birth and child health outcomes, the North Carolina General Assembly legislated recurring funding in the amount of $2,500,000 (Session Law 2015-241) to invest in evidence-based programs shown to reduce infant mortality and improve birth and health outcomes for children from birth to 5 years of age [6]. In fiscal year 2016, the North Carolina Division of Public Health (DPH) launched the Improving Community Outcomes for Maternal and Child Health (ICO4MCH) program establishing an academic-practice partnership between the University of North Carolina at Chapel Hill (UNC) Gillings School of Global Public Health, DPH, and LHDs to improve birth and child health outcomes.

This paper describes the implementation of a maternal and child health program in North Carolina using a collective impact framework, the principles of implementation science, and a health equity approach to address adverse birth and child health outcomes. It presents lessons learned from leveraging existing relationships to develop and sustain an academic-practice partnership that strengthened implementation.

Methods
The ICO4MCH Program
The ICO4MCH program is housed in the Women’s and Children’s Health Section of DPH. The program was designed to address 3 overarching aims: 1) improve birth outcomes, 2) reduce infant mortality, and 3) improve the health of children from birth to 5 years. The evidence-based strategies (EBSs) from which the grantees could select to address the 3 program aims included: Reproductive Life Planning/Increasing Access to Long-acting Reversible Contraception (LARC), Tobacco Cessation and Prevention, Ten Steps

Electronically published January 6, 2020.
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0029-2559/2020/81101
for Successful Breastfeeding, Positive Parenting Program (Triple P), Family Connects, and Clinical Efforts Against Secondhand Smoke Exposure (CEASE). Descriptions of each EBS are presented in Table 1. Key stakeholders and subject matter experts (ie, Positive Parenting Program [Triple P] staff), statewide partners in the Tobacco Prevention and Control Branch, Nutrition Services Branch, NC State Center for Health Statistics, and state and regional staff of DPH were involved in developing and specifying the EBSs that LHDs could choose to implement.

Planning funds were allocated to interested LHDs for January to May 2016. Eight LHDs submitted applications for the program. Applicants used the planning period to examine which EBSs were appropriate in their areas based on data that demonstrated a need for the EBS and stakeholder input. Submitted applications were reviewed by a multidisciplinary committee consisting of DPH staff from various branches and external reviewers outside of DPH who had content knowledge about the EBSs included in the request for applications. Applications were evaluated according to completeness, content, experience with similar projects, ability of the agency’s or organization’s staff, and cost. Five LHDs (covering 13 counties across North Carolina) were formally awarded implementation funding initially for 3 years* (herein referred to as grantees) in June 2016 (Figure 1) [6]. Funding for each grantee ranged from $350,000 to $500,000 annually. At this time, DPH hired a program manager to oversee the ICO4MCH program.

The Academic-Practice Partnership

Academic-practice partnerships typically represent an affiliation between an academic institution and a public health practice organization (eg, local health department) allowing partners to establish shared goals and engage in knowledge sharing [4]. Health departments that establish partnerships with academic institutions are sometimes referred to as academic health departments and considered teaching health departments, similar to the teaching hospital designations ascribed to hospitals affiliated with academic medical institutions [7]. Characteristics of public health practice organizations in partnership with academic institutions may include formal affiliation or memoranda of agreement, collaborative efforts to promote public health practice, or collaboration in public health research [7]. Our academic-practice partnership consisted of state-level, local-level, and academic public health practitioners (Figure 2). Staff members from the DPH Women’s and Children’s Health Section developed the evaluation plan with staff from UNC, subject matter experts in the evidence-based strategies from DPH, and stakeholders from LHDs. This group evolved into the evaluation stakeholders group, which also included staff from funded grantees and met twice a year to review program data and provide feedback to 2 evaluators and DPH.

The agreement addenda/contract for the funding also required that LHDs receive implementation support and coaching from UNC. Up to 5% of the budgets were allocated to fund 3 implementation coaches and a doctoral student to provide technical assistance to CAT and LHD program coordinators. Each grantee allocated 5% of their budget to support 3 implementation coaches and 1 doctoral student. Each coach worked with 1 or 2 grantees to: a) use data from the ICO4MCH program to make improvements to interventions; b) identify ways to be more intentional about internal and external communication; c) develop needed skills; d) build and maintain relationships with key stakeholders; and e) identify ways to sustain their work. Implementation coaches identified assessment tools to help grantees track and evaluate their progress toward performance measures (Figure 3). Assessment tools included the Collective Impact Readiness Assessment (herein referred to as Readiness Assessment) [8], Wilder Collaboration Factors Inventory (herein referred to as Wilder Inventory) [9], Drivers Best Practices Assessment (herein referred to as Drivers Assessment) [10], and the Health Equity Impact Assessment (HEIA) [11].

Results

We present how collective impact, implementation science, and health equity were operationalized in ICO4MCH and how they were facilitated by the academic-practice partnership. We use data from the assessments as examples of how the partnership worked and to highlight lessons learned from the first 2 years of the program.

Collective Impact

The collective impact framework was used to convene stakeholders around common objectives to improve birth and child health outcomes across each grantee. Collective impact is an effective framework and an evidence-based approach to support structured collaboration between stakeholders aligning to address complex issues [12]. During the planning phase, applicants received training on collective impact and completed the Readiness Assessment. During Year 1, grantees received at least 2 additional trainings on collective impact and a second Readiness Assessment was conducted. The assessment helped to determine if collective impact was the appropriate framework to address adverse birth and child health outcomes and, using a scale from 1 (strongly disagree) to 5 (strongly agree), to evaluate whether the county’s infrastructure and social environment were conducive to employing a collective impact approach.

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* The funding cycle would later be reduced to 2 years, instead of the original 3 years. At the end of 2 years grantees were eligible to reapply and all 5 were refunded for an additional 2 years, with Robeson County adding Scotland County to its team.
| Aims                              | Evidence-Based Strategy                                      | Description of Strategy                                                                                                                                                                                                                                                                                                                                                          | Grantees Implementing                                                                                     |
|----------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Improve birth outcomes           | Reproductive Life Planning/Increasing Access to Long-Acting Reversible Contraception (LARC) | The local health departments worked collaboratively with internal and external partners to: develop, implement, and advocate for policy and best practice of same-day LARC insertion; educate men and women of childbearing age to make informed decisions about family planning methods and how they may fit into their reproductive life plan; train health care providers on tiered counseling and LARC insertion and removal. | Durham County High Country Collaborative Mecklenburg Collaborative Robeson County Sandhills Collaborative |
| Reduce infant mortality          | Tobacco Cessation & Prevention                              | To decrease primary tobacco use among pregnant and postpartum women as well as second- and third-hand smoke exposure, local health departments provided direct clinical support around tobacco use, screening, and counseling trained practitioners in the 5As (Ask, Advise, Assess, Assist, Arrange) method of counseling or as Certified Tobacco Treatment Specialists; educated community members through worksite cessation classes or outreach promoting the use of QuitlineNC resources; and advocated for and helped to enforce smoke-free/tobacco-free policies in public spaces. | Durham County High Country Collaborative                                                                 |
|                                  | Ten Steps for Successful Breastfeeding                      | Local health departments provided technical assistance and support for businesses, worksites, and hospitals interested in becoming breastfeeding-friendly, educated the public about the benefits of increasing initiation and duration of breastfeeding for both mothers and infants, and trained health care providers and community-based and faith-based organizations to increase the knowledge and skills to support breastfeeding women. | Mecklenburg Collaborative Robeson County Sandhills Collaborative                                        |
| Improve child health, ages 0-5   | Positive Parenting Program (Triple P)                       | Local health departments are increasing access to and utilization of Triple P programming in daycare/child care centers for both caregivers and parents and focusing on pediatric and family practice clinics, faith-based organizations, and other agencies that serve children ages 0 to 5. | Durham County High Country Collaborative Mecklenburg Collaborative                                     |
|                                  | Family Connects                                             | Family Connects Nurse Home Visiting Program aims to increase child well-being by bridging the gap between parent needs and community resources. Activities include: 1 home visit by a registered nurse to all parents of newborns 2-12 weeks old born in the service area, 2 additional home visits from the nurse home visitor for families who need additional support, and referrals to resources and services for the parents or infant. | Durham County                                                                                          |
|                                  | Clinical Efforts Against Secondhand Smoke Exposure (CEASE)  | CEASE utilizes cessation services, counseling and educating parents and caregivers during pediatric and family clinical practice visits. Local health departments train the implementing clinic staff to screen all parents and caregivers for primary exposure to tobacco/smoke and second- and third-hand tobacco/smoke exposure with an electronic survey; provide counseling and cessation services to parents and caregivers as necessary following the 2 As-1 R (Ask, Assist, Refer) method and nicotine-replacement therapy (NRT) during the child’s health care visit; and provide referrals for parents and caregivers to the QuitlineNC and the NIH’s Smoke-Free Text Line. | Robeson County Sandhills Collaborative                                                                 |

Note. RLP/LARC – Reproductive Life Planning including access to long-acting reversible contraception (intrauterine devices and implants); Breastfeeding - Ten Steps for Successful Breastfeeding; Family Connects - Family Connects Newborn Home Visiting Program; Triple P - Positive Parenting Program; CEASE - Clinical Efforts Against Secondhand Smoke Exposure; ICO4MCH Grantees: Durham County Department of Public Health; High Country Collaborative (AppHealthCare [Alleghany, Ashe, Watauga], Toe River Health District [Avery], Wilkes County Health Department); Mecklenburg Collaborative (Mecklenburg County Health Department, Union County Consolidated Human Services Agency, Division of Public Health); Robeson County Department of Public Health; Sandhills Collaborative (Hoke County Health Department, Montgomery County Health Department, Cumberland County Health Department, and Richmond County Health Department and Human Services)
At baseline, the total scores across the 5 grantees ranged from 28 to 37 out of a possible 40 points with higher scores indicating a greater readiness for collective impact. Four of 5 grantees strongly agreed that their county was “committed to using data to set the agenda and improve work over time.” Overall, grantees also agreed that “existing relationships would enable engaging a cross-sector group of stakeholders,” and “influential champions or catalysts were present to convene cross-sector leaders and beneficiaries together.”

The results of the Readiness Assessment were shared with each community action team (CAT) and were used along with coaching to develop tailored action plans responsive to the grantees’ state of readiness, to strengthen their collective impact work.

Implementation coaches assisted grantees in adopting the 5 pillars of collective impact, including setting a common agenda, adequate backbone support, communication, mutually reinforcing activities, and shared measurement [12]. The common agenda was outlined in the legislation with the aim of improving birth and child health outcomes. LHDs provided backbone support, which included hiring key staff, including program coordinators, to administer and lead the program; assuring adequate resources for program activities; reporting on program activities quarterly; and convening partners to facilitate alignment of activities. As the backbone organizations, LHDs were required to develop and maintain a community action team that met regularly with the goal of 25% of CAT membership from community experts (members who utilize public health and human services). The purpose of the CAT was to engage providers, community experts, public health professionals, and other cross-sector stakeholders (eg, family health agencies, nonprofits) working to improve the health and well-being of the community to provide guidance on the planning, implementation, and evaluation of the EBSs. LHDs also created implementation teams (ITs) for each of the EBSs. The ITs led key program activities and convened at least once every 2 months. The CAT and ITs were the main means of continuous communication and mutually reinforcing activities to accomplish the specific work of the EBSs. For instance, in the first year of the program, grantees held an average of 24 CAT and IT meetings (range: 13 to 31) and convened 1,325 stakeholders. The program coordinators were instrumental in connecting resources from the implementation coaches and DPH program manager with the needs of the CATs.

The evaluation plan facilitated shared measurement. The DPH program manager and the UNC evaluators created quarterly reports to collect performance measure data from grantees associated with each EBS and qualitative updates on the coaching and collective impact milestones. Data collected from grantees on process and fidelity measures were used to assess success of implementation. Monthly training logs from the implementation coaches captured activities and lessons learned. The evaluators conducted focus groups with each grantee’s CAT during Year 1 for a snapshot of the collective impact process. The evaluators received and analyzed additional data from partners such as the QuitlineNC and Family Connects to complete the shared measurement system. Biannually, the evaluators prepared a program-wide report for the evaluation stakeholders committee, which included the grantees. Implementation coaches and program coordinators then shared these reports with the CATs and ITs.

To assess several domains aligned with successful collaboration, the CATs at each site completed the Wilder Inventory, a 40-item assessment, once yearly. The Wilder Inventory is a tool grounded in extensive research about successful community collaboration across 6 categories:
environment, process and structure, membership, communication, purpose, and resources [9, 13, 14]. The Wilder Inventory informs grantees about how well the CAT is working together to achieve goals. Overall, scores improved between Year 1 (range: 3.1-4.2) and 2 (range: 3.4-4.4) on all factors, for all grantees. Strengths identified across all grantees included good leadership; genuine energy and motivation of diverse, participating members; and improvements in coordination and communication. Grantees expressed challenges in setting tangible timelines and clear expectations for CAT members and developing sustainable models and stable funding sources to engage community members. Implementation coaches used the data from each of the assessments to help grantees develop action plans to progress toward achieving grantee goals and program performance measures.

**Implementation Science**

During Year 1, DPH staff and the UNC implementation coaches offered training to grantees to increase their skills and knowledge of the EBSs. The extent of evidence to support the strategies implemented by the grantees varied across EBS, with some interventions, such as Triple P, having a highly developed protocol for implementation and others, such as Reproductive Life Planning/LARC, having a more diffuse set of guidelines. This variation resulted in adaptations of the interventions that may have resulted in less fidelity to the models being implemented for strategies with broader guidelines.

To assess and drive fidelity, the National Implementation Research Network’s Drivers Assessment tool was utilized to assist teams in clarifying the program’s core components and evaluating implementation supports across 3 categories of implementation drivers, including competency, organization, and leadership [10]. Each grantee implemented the Drivers Assessment once per year for each EBS with the ITs [15]. Results from the Drivers Assessment administered during Years 1 and 2 revealed that there were unclear expectations regarding which members of the IT were responsible for tracking fidelity data; feedback loops to improve training and inform coaching were not well established; and program coordinators struggled with knowing when and how to engage team leadership to convey implementation challenges. Findings from the Drivers Assessment were used to create improvement plans for increased competency, organizational support, and leadership.

**Health Equity**

Recent research on collective impact suggests that programs without an explicit focus on health equity typically do not experience results that advance equity, while those that have a stated equity focus have more success in addressing long-standing disparities [16]. Thus, in the beginning of Year 2, the ICO4MCH program embarked on building the capacity of the grantee backbone and CAT members through a program-wide training on health equity and how to implement a Health Equity Impact Assessment (HEIA). The North Carolina HEIA was developed by #impactEQUITYNC, a collaboration between NC Child, the DPH Women’s and Children’s Health Section, the NC Office of Minority Health and Health Disparities, and the Rockingham County Division of Health Services [11].

![Diagram](image-url)
Grantees conducted a HEIA for each of the implemented EBSs starting in Year 2. The purpose of the HEIA tool was to assess the impact of each EBS on advancing equity. Program coordinators completed prework activities to prepare for the HEIA, including determining which stakeholders to invite to the HEIA meeting; engaging in a self-assessment of their knowledge, skills, and language in health equity and health disparities; and preparing data profiles of key measures related to the EBS, stratified by race and ethnicity. The HEIA consists of a series of 5 worksheets with step-by-step instructions intended to help grantees describe the main elements of the EBS; select, analyze and interpret data measures that align with the EBS; identify potential modifications to the delivery of the EBS; and develop a monitoring plan to support accountability toward advancing equity. Populations prioritized to advance equity varied by grantee and were informed by the location and EBS; however, underserved communities and communities most burdened by specific adverse health outcomes were most often prioritized. For example, some grantees prioritized breastfeeding education and support among Black and Native American expectant mothers due to more burdensome rates of infant mortality and lower proportions of breastfeeding initiation and duration. One grantee identified several modifications in the breastfeeding HEIA including making breastfeeding education opportunities available to all clinical staff (not just those in maternal and child health) and establishing male support groups. By the end of Year 2, their male advisory group had its first meeting and they were working on a human lactation training module with human resources for all staff. Implementation coaches assisted with planning for the HEIA, preparing data, observing and providing feedback, and thinking through modifications.

**Lessons Learned**

There were several lessons learned from implementing the ICO4MCH program through an academic-practice partnership. One of the most challenging aspects of implementation across most grantees included recruiting and sustaining diverse and committed members to the CATs. Only one grantee was able to meet the performance measure of maintaining 25% of CAT membership from community experts. Grantees struggled with maintaining momentum and several CATs lost members between the planning phase/grant application and actual implementation. Others struggled to balance diversifying their CAT membership—which required engaging community members, orienting them to the CAT, meeting them where they were, and educating them on the EBS and public health acronyms—while at the same time needing to maintain...
momentum by having effective meetings and moving the work of each EBS forward. Equally challenging was engaging the participation of health care providers in the CATs. LHDs struggled with prioritizing the provision of patient care while CATs struggled with the absence of the perspectives and expertise of clinical providers. Particularly for multi-county collaboratives, it was a challenge to balance meeting times and locations across large distances and among a diverse group of stakeholders. During Years 1 and 2 of the program, the composition of grantee teams changed due to staff turnover. Vacancies in staff positions led to program coordinators assuming additional implementation responsibilities. Implementation coaches discussed with grantees the importance of defining roles for each member of the CAT upon invitation and reiterating expectations throughout their convenings. In addition, coaches provided training and technical assistance using modules from the Kansas University Center for Community Health and Development Community Tool Box on engaging communities and increasing participation and membership [18].

Despite these challenges, grantees appreciated how the structure of the CAT supported successful implementation of the EBSs. One grantee staff member shared: “The CATs are a critical space for community gathering, networking, and planning, and truly inform the implementation of the evidence-based strategies. They ensure community stakeholders are engaged as active participants in planning, implementation, and evaluation processes.” Staff at another funded site shared: “With the development of the CAT we now have a ‘go to’ group for maternal and child health work.”

Grantees needed support navigating priorities between the grant requirements and the needs of their CAT members. Implementation coaches helped program coordinators troubleshoot how to incorporate community experts’ needs while meeting the performance measures associated with each EBS and staying within the scope of ICO4MCH. Input from CATs was conveyed to implementation coaches, which in some circumstances led to modifications in the program. For example, during Year 2 of the program, one CAT expressed a need to modify the focus of the original RLP/LARC EBS to include more of a focus on reproductive justice [19]. This adaptation strengthened the program because it was more aligned with community needs and addressed a concern that was present for multiple grantees. As such, another grantee noted that one of their biggest successes with the CAT was consulting with the SisterSong Women of Color Reproductive Justice Collective to provide Reproductive Justice 101 and 102 trainings to their county [20].

Grantees conducted several assessments to evaluate the environment for collective impact, health equity, and implementation drivers. During focus group sessions, grantees conveyed a need to understand how each of the assessments supported the program and how the data were utilized. Assessment fatigue propelled implementation coaches to work with grantees to determine data needs and help grantees interpret the data to prepare for CAT meetings. As one grantee reported, “Our coach help[s] us go about our work in a way that is effective, appropriate, and resonates with our community.” When grantees felt supported and empowered, they used their data strategically with their CATs to establish goals for the new funding period.

Grantees benefited from and appreciated that the program included an evaluation team that was responsible for creating tailored evaluation reports that incorporated summaries based on co-interpretation of the data. These exercises helped to build the data capacity among grantees. For example, several grantees have shared data with their CATs through data placemats and other activities to facilitate intentional group learning at the evaluation stakeholder meetings. One grantee’s CAT used a data placemat during a cultural competency training for the regional leadership team that focused on how all three strategies could best meet the needs of their rural communities. Lastly, grantees acknowledged that having regular calls with other ICO4MCH grantees was a major benefit of the program.

Discussion

Academic-practice partnerships facilitate timely diffusion of innovative and evidence-based maternal and child health strategies. LHDs that engage in partnerships with academic institutions or faculty researchers are more likely to implement evidence-based interventions than LHDs without these partnerships [1]. While academic-practice partnerships are described in the context of nursing in many publications emphasizing the benefits for improving the public health workforce (ie, demonstrate how LHDs serve as suitable practicum placement sites for students affiliated with academic institutions), this paper described how collective impact was operationalized in a state-funded maternal and child health program through an academic-practice partnership.

Several contextual factors facilitated the successful implementation of the ICO4MCH program. First, the legislation for the ICO4MCH program specifically identified UNC as the evaluator establishing the foundation of an academic-practice partnership [6]. Further, the DPH agreement addenda required LHDs to retain implementation coaches from UNC. Coaching was instrumental to support the development of the collective impact model. Moreover, funding was allocated for the evaluation and implementation coaching at UNC, LHD grantees, and for a dedicated DPH program manager to provide oversight and guidance. Earmarked funding can support dedicated time to a specific program, which is particularly important in LHD settings, where funding is declining in some jurisdictions [21, 22]. To enhance evidence-based decision-making, Kovach and colleagues called for funding to support long-term and strategic partnerships between LHDs and schools and programs of public health [23]. ICO4MCH can serve as an example of how to structure future collaborations.
There were several lessons gleaned from implementing 6 evidence-based strategies among 5 grantees. First, persistence and innovation were necessary to attract and sustain an active and engaged CAT comprised of a diverse group of stakeholders. CAT structures were unique and responsive to each geographic region, and grantees were intentional about how to best engage community experts and worked with implementation coaches to develop strategies that allowed them to maintain the momentum of the team. CATs are effective in involving members with unparalleled knowledge about the community and developing and implementing tailored recommendations. For example, Corsino and colleagues reported that the Achieving Health for a Lifetime team was successful in engaging community partners by building trust through formal and informal meetings in the community, addressing power dynamics by ensuring community leaders had prominent roles on the team with contributions that were visible to the community, and articulating to community partners that their main focus went beyond collecting data to improve the community [24]. Our multi-county collaboratives navigated balancing meeting times and locations to accommodate larger groups of stakeholders traveling further distances. A study on building collective impact to address adolescent pregnancy in LHDs also noted challenges that staff experienced in scheduling meetings during times that accommodated staff and community members’ schedules, recommending establishing practices that optimized how the coalition functioned [25].

Second, understanding how to best leverage data and disseminate it in ways that support end-user needs is important. Implementation coaches trained grantees on the utility of the health equity, collective impact, and implementation assessments used in this program, and further provided guidance about framing the data for advancing the work. With established feedback loops, programs can determine if there is a need to reduce or streamline assessments for data to be truly actionable to optimize grantee efforts. Moreover, additional published descriptions of the applications of these assessment tools are warranted to increase the effectiveness of these assessments in practice. The academic-practice partnership demonstrates how academic institutions and partners can build capacity in LHDs to make timely, reliable, and actionable data available to communities.

Conclusion

An academic-practice partnership was integral to the successful implementation of the ICO4MCH program and may serve as a model for moving evidence-based maternal and child health programs to practice in LHD settings. This model will benefit from an examination of the sustainability of key elements of the program and its impacts on long-term birth and child health outcomes. NCMJ
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