frontiers | Research Topics

The next phase of public health: Innovations from the private sector to build health equity, collaborations, and resilience

Edited by
Susan S. Garfield, Frances Garfield and Amy S. White

Coordinated by
Richard Siegrist, Natasha Eslami, Malu Foley and Sylvie Babat

Published in
Frontiers in Health Services
Frontiers in Public Health

ISSN 1664-8714
ISBN 978-2-8325-4220-0
DOI 10.3389/978-2-8325-4220-0

About Frontiers

Frontiers is more than just an open access publisher of scholarly articles: it is a pioneering approach to the world of academia, radically improving the way scholarly research is managed. The grand vision of Frontiers is a world where all people have an equal opportunity to seek, share and generate knowledge. Frontiers provides immediate and permanent online open access to all its publications, but this alone is not enough to realize our grand goals.

Frontiers journal series

The Frontiers journal series is a multi-tier and interdisciplinary set of open-access, online journals, promising a paradigm shift from the current review, selection and dissemination processes in academic publishing. All Frontiers journals are driven by researchers for researchers; therefore, they constitute a service to the scholarly community. At the same time, the *Frontiers journal series* operates on a revolutionary invention, the tiered publishing system, initially addressing specific communities of scholars, and gradually climbing up to broader public understanding, thus serving the interests of the lay society, too.

Dedication to quality

Each Frontiers article is a landmark of the highest quality, thanks to genuinely collaborative interactions between authors and review editors, who include some of the world's best academicians. Research must be certified by peers before entering a stream of knowledge that may eventually reach the public - and shape society; therefore, Frontiers only applies the most rigorous and unbiased reviews. Frontiers revolutionizes research publishing by freely delivering the most outstanding research, evaluated with no bias from both the academic and social point of view. By applying the most advanced information technologies, Frontiers is catapulting scholarly publishing into a new generation.

What are Frontiers Research Topics?

Frontiers Research Topics are very popular trademarks of the *Frontiers journals series*: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area.

Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers editorial office: frontiersin.org/about/contact

The next phase of public health: Innovations from the private sector to build health equity, collaborations, and resilience

Topic editors
Susan S. Garfield — ey US, United States
Frances Garfield — MASS GENERAL BRIGHAM, United States
Amy S. White — Department of Health Sciences, Lehman College, United States

Topic coordinators
Richard Siegrist — Harvard University, United States
Natasha Eslami — Ernst and Young, United States
Malu Foley — Ernst and Young, United States
Sylvie Babat — Ernst and Young, United States

Citation
Garfield, S. S., Garfield, F., White, A. S., Siegrist, R., Eslami, N., Foley, M., Babat, S., eds. (2024). *The next phase of public health: Innovations from the private sector to build health equity, collaborations, and resilience*. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-4220-0

Table of contents

frontiers | Frontiers in Health Services

TYPE Editorial
PUBLISHED 14 December 2023
DOI 10.3389/frhs.2023.1297266

OPEN ACCESS

EDITED AND REVIEWED BY
Joris Van De Klundert,
Adolfo Ibáñez University, Chile

*CORRESPONDENCE
Susan Garfield
✉ susan.garfield@ey.com

RECEIVED 19 September 2023
ACCEPTED 27 November 2023
PUBLISHED 14 December 2023

CITATION
Garfield S, White A, Garfield F, Siegrist R and Eslami N (2023) Editorial: The next phase of public health: innovations from the private sector to build health equity, collaborations, and resilience.
Front. Health Serv. 3:1297266.
doi: 10.3389/frhs.2023.1297266

Editorial: The next phase of public health: innovations from the private sector to build health equity, collaborations, and resilience

Susan Garfield[1]*, Amy White[2], Frances Garfield[3], Richard Siegrist[4] and Natasha Eslami[1]

[1]Ernst and Young, New York, NY, United States, [2]Lehman College, Bronx, NY, United States, [3]Independent Researcher, Cambridge, MA, United States, [4]School of Public Health, Harvard University, Boston, MA, United States

KEYWORDS

public health, health equity, collaboration, resilience, private sector

Editorial on the Research Topic
The next phase of public health: innovations from the private sector to build health equity, collaborations, and resilience

The Covid-19 pandemic highlighted foundational challenges in managing the public's health and the persistent health inequities in our communities. Within the private sector, companies witnessed how adverse health events impact the economy at large, their employees, and their customers. As a result, many companies have begun to see that they have a critical role in improving the long-term well-being of the communities in which they work and how health equity can build resilience. This recognition has driven many to action. Either on their own or in collaboration with established public health players, companies are deploying private sector points of view and practices to public health and health equity challenges.

With investments in innovation and collaboration, companies are contributing expertise, technology, and capability to advance patient experience and outcomes while attempting to improve resilience to public health events in an unknown future. They bring resources, perspectives, and approaches that are often distinct from how Public Health practitioners, policymakers, and community organization have worked to date. As such, collaborations can bring together complementary resources and expertise to address challenges each organization couldn't solve on its own. For example, companies can support public organizations by providing technical expertise, financial support, and education, as well as a platform for positive publicity and exposure. Meanwhile, public health entities can provide specialized knowledge, pre-existing community capital, and lessons learned from prior interventions. Though challenges exist, leveraging complementary skills to synergistically impact Public Health and Health Equity challenges holds significant promise.

In this Research Topic of Frontiers in Health Services, titled *The Next Phase of Public Health: Innovations from the Private Sector to Build Health Equity, Collaborations, and Resilience*, the contributing authors explore *How Best to Collaborate*, the *Challenges of Innovation Readiness*, and *Drivers of Success*. Through observational studies and review articles, the authors examine best practices from the private sector, perspectives on evaluating organizational readiness and resilience, and ways to overcome collaboration challenges. Together, they challenge stakeholders within and beyond the private sector to

operate more effectively as equity and resilience change agents on their own and in collaboration with others.

How best to collaborate

Once organizations understand their own resources, goals, and capabilities, collaboration opportunities emerge. But the path to successful collaborations to advance Health Equity is challenging. In their paper discussing the collaborative assessment of online women's health education tools, Edouard et al. discuss elements of a successful collaboration between an academic institution and a corporate partner. They review how to first align corporate and academic purposes and then how critical to success communication, alignment of goals, and shared decision-making are throughout. Taylor et al. used multiple retrospective case studies to examine how business and nonprofits build sustainable partnerships. They found that partnerships that acknowledged differences were more successful and resilient. Arnaout et al. report four key enablers for enduring and financially successful partnership models. They describe how one major technology company's efforts to increase access to health services not only allowed underserved communities to be served during or after a crisis but also created a foundation for the impacted communities to build the needed knowledge, capacity, and resources to tackle unexpected future crises. Partnerships like this rely on functional organizational and operational models to work, often different from either group's individual structure. Aveling et al. discuss the benefits of emerging hybrid organizing models, the forms hybrid organizations can take, and how each can work over time to advance collaborative public health and health equity goals. In addition, Ingman et al. demonstrate the power of partnerships in advancing evidence-based practice in childhood obesity. They found that effective partnerships, a nuanced approach to fidelity, scalability considerations, and the role of technical assistance and training all contributed to the successful implementation of their local public health agency - elementary school partnership.

Challenges of innovation readiness

To understand organizations' readiness for and likely resilience when faced with various public health threats, Garfield et al. developed their Public Health Resilience Assessment Tool which explores how companies and other organizations are positioned to respond. It also highlights areas of needed growth and underscores what resources can be leveraged to advance an organization's own or collaborative goals related to Public Health. The paper then examines the tools' application to 8 companies across sectors. Pradier et al. discuss a model for addressing complex health challenges at the community level through ongoing exchange of information and engagement as experienced through the Open Arena for Public Health. They highlighted challenges to changes and innovations challenges through building collective intelligence and conducting ongoing policy dialogues.

Drivers of success

Bringing innovations from the private sector to advance Health Equity and Public Health involves understanding critical success factors like goal clarity, transparency, and data sharing. Cronin and Franz discuss the public availability of private hospitals' Community Benefits and Implementation Reports as part of the private sector's collaboration with the public health system. Arnaout et al. build on these insights by highlighting the key role of bidirectional data exchange in creating successful public-private partnerships. Data can be leveraged to support the case for change and demonstrate clinical and economic benefits on both sides. The authors also highlight how emerging technologies such as AI can unlock additional value by drawing further insights that lead to more targeted interventions.

As more private sector programs in Public Health and Health Equity are launched, people may move out of the public sector into these new opportunities. This mobility and cross-pollination of skills and experience is largely positive but may also have unforeseen negative outcomes. White's article on *Transitioning from Medicaid to Private Health Insurance* showed that on the individual level, employees moving to the private sector need education and support from their employers throughout the transition process to address core issues like health insurance continuity.

Overall, the researchers in this Research Topic demonstrate that there are multiple factors critical to successfully harnessing private sector participation in addressing Public Health and Health Equity challenges. The private sector's speed, resourcing, and organizational focus can accelerate the impact of their interventions. However, given that collaboration is critical to most endeavors, understanding how to best set up private-public partnerships, work together, and leverage data and technology to advance common goals will be essential for success.

Author contributions

SG: Writing – original draft, Writing – review & editing. AW: Writing – review & editing. FG: Conceptualization, Writing – review & editing. RS: Conceptualization, Writing – review & editing. NE: Conceptualization, Writing – review & editing.

Conflict of interest

SG and NE work for EY, a private for profit consulting firm that does business with many organizations in the health care, life sciences, and public sectors. While the editorial is not directly linked to or influenced by these organizations, it is noted that there is a financial relationship between EY and many health and public health stakeholders.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

frontiers | Frontiers in Health Services

ORIGINAL RESEARCH
published: 12 July 2022
doi: 10.3389/frhs.2022.816536

A Partnership Among Local Public Health Agencies, Elementary Schools, and a University to Address Childhood Obesity: A Scalable Model of the Assess, Identify, Make It Happen Process

Benjamin C. Ingman, Carla Loecke and Elaine S. Belansky*

Center for Rural School Health and Education, Morgridge College of Education, University of Denver, Denver, CO, United States

OPEN ACCESS

Edited by:
Tracy Finch,
Northumbria University,
United Kingdom

Reviewed by:
Lorelei Jones,
Bangor University, United Kingdom
Lindsey Turner,
Boise State University, United States

****Correspondence:***
Benjamin C. Ingman
benjamin.ingman@du.edu

Specialty section:
This article was submitted to Implementation Science, a section of the journal Frontiers in Health Services

Received: *16 November 2021*
Accepted: *27 May 2022*
Published: *12 July 2022*

Citation:
Ingman BC, Loecke C and Belansky ES (2022) A Partnership Among Local Public Health Agencies, Elementary Schools, and a University to Address Childhood Obesity: A Scalable Model of the Assess, Identify, Make It Happen Process. Front. Health Serv. 2:816536. doi: 10.3389/frhs.2022.816536

Background: One pathway to addressing childhood obesity is through implementing evidence-based practices (EBPs) shown to promote nutrition and physical activity in K-12 school settings. Assess, Identify, Make it happen (AIM) is a strategic planning process to engage stakeholders in implementing EBPs in their K-12 schools. Local Public Health Agencies (LPHAs) are a potential partner to facilitate this process to a broader audience of rural school communities.

Methods: A process and outcome evaluation design was applied in this study to examine the extent to which LPHAs effectively implemented AIM with rural/frontier schools in comparison to university staff. Data collection included post-meeting surveys completed by facilitators, a post-intervention interview with facilitators, a survey of school task force members at the end of the AIM process, and systematic documentation of the intervention.

Results: ***Reach***—Among the 26 eligible elementary schools, 18 (69%) agreed to participate.

Effect—In total, schools facilitated by LPHAs fully implemented an average of 4.0 changes per school, while schools facilitated by the university staff fully implemented an average of 3.7 changes.

Adoption—Among the five LPHAs in the target region, all five agreed to partner on the initiative, but some agencies were unable to identify sufficient personnel to facilitate all schools in their catchment area.

Implementation—(1) In total, 89 of 94 (95%) meetings scheduled by LPHA facilitators occurred. 47 of 48 (98%) meetings scheduled by the university staff occurred. (2) The university staff self-reported 93% of agenda items in the AIM process as "completely" followed while LPHA facilitators reported 41% of agenda items as "completely" followed. (3) Task force satisfaction with the AIM process and facilitator showed limited variance across LPHAs and university-facilitated schools.

Maintenance—Of the 16 school districts that agreed to participate in the school-based version of AIM, 9 (56%) also participated in a district-wide version of AIM 2 years later.

Conclusion: AIM is an effective process for implementing EBPs in elementary schools when facilitated by LPHAs. Effective partnerships, a nuanced approach to fidelity, scalability considerations, and the role of technical assistance and training all contributed to the successful implementation of this LPHA-Elementary school partnership.

Keywords: implementation science, research intermediaries, elementary schools, school health, rural, public health agencies

BACKGROUND

Childhood Obesity, Schools, and the Role of Research Intermediaries

Childhood obesity rates have continued to climb over the last several decades across the United States, with higher rates of obesity among rural youth (1), Latinx youth (2), and youth living in poverty (3). Schools are situated to address these systemic inequities by promoting nutrition and physical activity (4). This is especially the case in rural communities, where schools are often considered the hubs of social and cultural activities (5).

The evidence for school-based practices and policies that promote students' physical activity (6), nutrition (7), and mental and behavioral health (8) continues to grow. Despite ongoing concerns about the efficacy of childhood obesity prevention programs (9), there are many practices reflected in the literature that have been shown to increase student opportunities for physical activity and nutrition in schools (10, 11). Evidence-based practices (EBPs) in K-12 schools that promote nutrition include cafeteria-based practices [e.g., offering healthy beverages and foods (12), placing fruits and vegetables earlier in the line (13), scheduling recess before lunch (14), using an "offer" rather than "serve" system (15)]; as well as practices outside the cafeteria [e.g., healthy food for class parties and rewards (16), regular access to water (17), and school store policies that promote healthy food and drinks (18)]. Increased physical activity in schools is linked to practices for physical education [e.g., using an evidence-based curriculum and equipment (19, 20)], environment [e.g., adequate indoor and outdoor facilities (21)], recess [e.g., not withholding recess as punishment, providing equipment and organized activities during recess (22)] classrooms [e.g., classroom activity breaks (23), standing desks (24)], and extracurricular activities [e.g., providing intramural or interscholastic sports (25)]. However, many schools have not implemented those practices or recommendations (26). This disconnect between research and practice, routinely documented in the fields of public health and healthcare (27, 28) are also reflected in the implementation status of practices and policies in K-12 schools (29, 30).

Research intermediaries, or organizations that help community-based entities learn about and implement EBPs (among other functions) (31), have made progress in facilitating the connection between research and practice in K-12 schools. In particular, leveraging practices of community engagement to facilitate the translation of EBPs to school environments has shown promise (32, 33). However, additional strategies are necessary to reach schools in rural, high-poverty settings where resources and research tend to be scarce (34). One pathway to address these gaps in knowledge and translation is through engaging school stakeholders in a process to implement EBPs in their schools. Such a process can reach more schools if additional organizations and agencies are identified and mobilized as research intermediaries.

AIM (Assess, Identify, Make It Happen)

Assess, Identify, Make it Happen (AIM) is a strategic planning process to promote healthy nutrition and physical activity in K-12 schools. In this process, a task force of community stakeholders convenes to Assess the current status of evidence-based practices (EBPs) shown to promote healthy nutrition and physical activity, Identify EBPs to put in place, and Make it happen by implementing those EBPs. The 12-month process is facilitated by a trained and certified facilitator.

AIM was tested in rural, elementary schools using a pair-randomized control trial and demonstrated to be an effective strategy for promoting the implementation of effective school-based environment, policy, and practice features previously shown to increase students' physical activity and healthy nutrition (29). AIM schools made an average of 4.4 evidence-based changes per school with 90% still in place a year later compared to schools that used the CDC's School Health Index which made an average of 0.6 effective changes with 66% in place a year later. This first study demonstrated that AIM is an effective method of promoting the implementation of EBPs when facilitated by university staff working directly with rural communities. While these results bode well for the process itself, relying on university staff to implement AIM poses a challenge to scalability (i.e., relies on university-based personnel and considerable travel expenses). A delivery model in which individuals from rural communities facilitate the process in their own communities would greatly improve the scalability of AIM.

Local Public Health Agencies

Local Public Health Agencies (LPHAs) were identified as entities well positioned to promote the scalability of AIM. Among the ten essential services of LPHAs are to: Communicate effectively to inform and educate people about health, factors that influence it, and how to improve it; Strengthen, support, and mobilize communities and partnerships to improve health; Create, champion, and implement policies, plans, and laws

TABLE 1 | AIM process meeting descriptions.

AIM Process for Cohort 1 (2014–2015) ***9 meetings, 120 min each 9 (6) schools***		**AIM Process for Cohort 2 (2015–2016)** ***7 meetings, 60–75 min each 10 (7) schools***	
Meeting title	**Meeting description**	**Meeting title**	**Meeting description**
ASSESS		**ASSESS**	
1. Getting started	Introduction to AIM, school snapshot Pt 1: strengths	**1. Looking for opportunities**	Identify strengths and opportunities related to healthy eating and physical activity in different parts of the school (e.g., cafeteria., classroom, before/after school)
2. Looking for opportunities	School snapshot Pt 2: opportunities, best practice report, list of possible changes	**2. Investigating best practices**	Review best practice report, make a list of possible changes
IDENTIFY		**IDENTIFY**	
3. Evaluating change possibilities	Rating importance and feasibility	**3. Identifying changes**	Rate importance and feasibility, select changes
4. Selecting changes	Review importance and feasibility, select changes		
MAKE IT HAPPEN		**MAKE IT HAPPEN**	
5. Planning for approval and buy-in	Create action plans: Focus tasks on getting approval to make changes and building buy-in among stakeholders	**4. Building support for changes**	Action Planning: Tasks to get approval and build buy-in for changes
6. Planning for implementation	Create action plans: Focus tasks on nuts and bolts of implementing practices	**5. Planning for implementation**	Action Planning: tasks to put changes in place and sustain them over the long term
7. Planning for sustainability	Create action plans: Focus on tasks to sustain changes over time; create timeline for implementing practices	**6. Wrapping up**	Create timeline for implementing changes and assign tasks, plan for summer
8. Checking our progress	Assign remaining tasks, plan for summer	**7. Checking in**	Check in to document progress and keep things on track
9. Moving forward	Check in the following fall to document progress and keep things on track		

TABLE 2 | RE-AIM constructs and evaluation metrics.

RE-AIM Dimensions (42)	**Evaluation metrics in this work**
Reach. Proportion of the target population that participated in the intervention	• Number and demographic characteristics of participating school districts in the target region
Effect *(or Efficacy).* Success rate if implemented as in guidelines/protocol	• Number of physical activity and nutrition evidence-based practices fully implemented, partially implemented, planned for implementation, and not implemented
Adoption. Proportion of settings that adopt the intervention	• Number and characteristics of LPHAs in the target region implementing AIM
Implementation. Extent to which the intervention was implemented as intended	• Number and length of meetings facilitated • Facilitator time spent preparing and feelings of preparedness • Facilitator fidelity to facilitator guide • Extent of idea sharing and tension noted during meetings • Taskforce satisfaction with AIM process and facilitators
Maintenance. Extent to which a program is sustained over time	• School district participation in a subsequent version of AIM • Anecdotal continuation of wellness teams

that impact health (35). These functions closely align with the purposes of the AIM process. Additionally, LPHAs are physically proximate to target populations, have considerable knowledge of the community, and prioritize addressing childhood obesity. Although LPHAs in rural/frontier regions may face challenges such as a lack of qualified staff, and limited access to training, information, and resources (36, 37), they are also well positioned to leverage local cultural assets and flexible structures for developing new productive partnerships and networks (38). Further, half of the 2,400 Local Health Departments/Agencies in the USA serve rural populations (39). This confluence of factors positions LPHAs as a promising pathway to scalability for school- and community-based initiatives. Others have been successful in partnering with LPHAs to implement school-based initiatives (40), although concrete assessments of implementation characteristics in applying such an approach are scant in the literature.

Partnering with LPHAs to facilitate the AIM process required important changes to several elements of the AIM process, facilitator training, and technical assistance (41). Specifically,

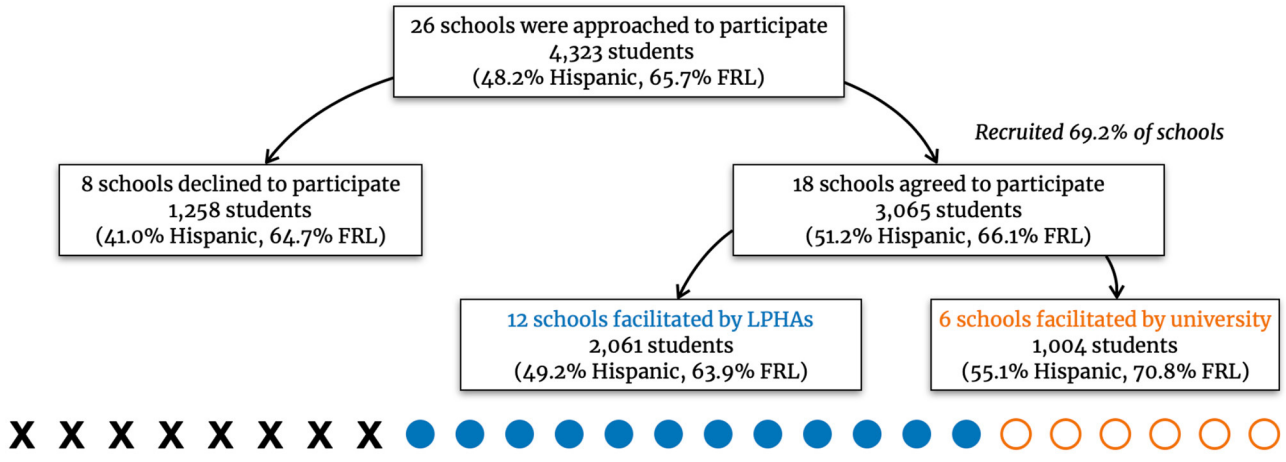


FIGURE 1 | Demographics of participating and non-participating elementary schools.

this change in implementation model was coupled with the development of an AIM website, the revision of AIM meeting guides and materials, streamlining and automating labor-intensive aspects of the process (e.g., creating an automated survey and report generating system). For these reasons, an implementation science framework was adopted to evaluate not only the outcomes of the intervention, but also to describe key dimensions of implementation across the RE-AIM framework (42). This work contributes to discourse of implementation science that seeks to understand the effectiveness of interventions when implemented in real-world settings and provides additional perspectives on the factors that influence successful implementation (43).

The purpose of this study was to examine the extent to which LPHAs could effectively facilitate AIM with rural/frontier schools in comparison to university staff. The RE-AIM framework was used for this inquiry because it provides a systematic and comprehensive structure to evaluate interventions as implemented in complex, real-world settings.

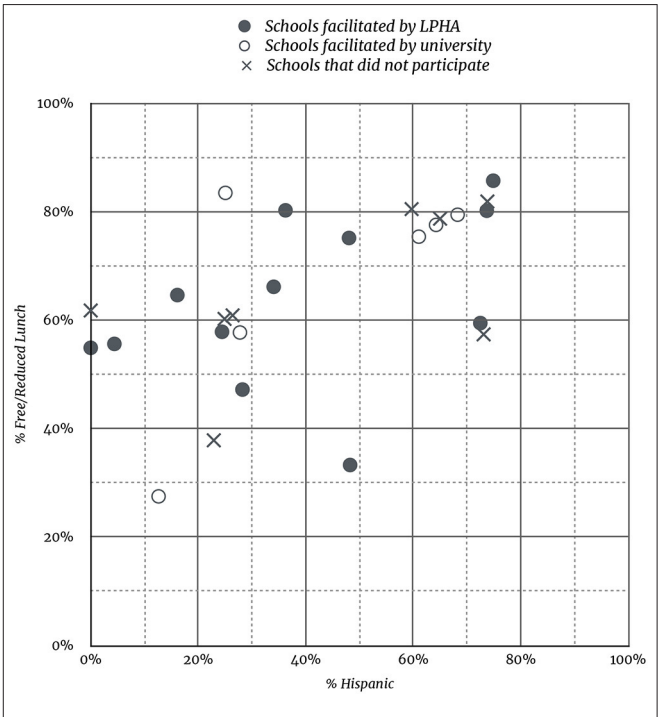


FIGURE 2 | Scatterplot of student Free/Reduced Lunch rate and % Hispanic for participating and non-participating schools.

METHODS

Program Implementation

Program Description: AIM Process

The goal of the AIM process is to implement evidence-based practices (EBPs) for promoting student nutrition and physical activity in school settings. For each school participating in AIM, a task force of school stakeholders (including the school principal, classroom teachers, physical education teachers, school staff, food service directors, nurses, and parents) convenes for a series of meetings led by a facilitator trained and certified in the process. The AIM facilitator is provided a facilitator guide, which includes detailed agendas, activities, and talking points for each meeting, as well as tasks to complete between meetings. Before the AIM process begins, baseline data is collected *via* a three-module survey based on the School Environment and Policy Survey (SEPS) (29). This survey is completed by the principal, food service director, and physical education teacher and generates a Best Practice Report that provides the status (fully implemented, partially implemented, not implemented) of EBPs for nutrition and physical activity.

After the task force has been recruited and oriented to the process, they discuss strengths and challenges related to student health behaviors and school practices to promote student health. The task force also reviews the Best Practice Report to understand the current implementation status of nutrition and physical

activity EBPs in the school and generate a list of potential changes to make to the school. This list of potential changes is later revised and clarified before final selections are made based on the importance of a change for student health and the feasibility of implementing it.

The task force engages in several planning activities to promote the successful implementation of the selected changes. This includes planning to get approval and buy-in for changes, identifying individuals to champion changes, creating a task-oriented timeline for implementing changes, and planning for sustainability. The task force convenes for a final meeting to review progress in implementation, and plan any next steps for the group, such as checking in on implementation or transitioning to a wellness team.

The AIM process was implemented with two separate cohorts and revised between cohort 1 (eight schools) and cohort 2 (10 schools) based on feedback from facilitators and task force members. The most significant revision was the amount of time dedicated to AIM meetings and activities; the number of meetings was reduced from 9 to 7 meetings, and the length of meetings was reduced from 120 to 60–75 min (see **Table 1).**

Program Setting

This study took place from 2014 to 2016 in a rural/frontier plains region in Colorado encompassing seven counties and 15,962 square miles (larger than the state of Maryland) that includes the lowest county health rankings and highest childhood poverty rates in the state (44).

Program Recruitment

Project staff recruited LPHAs and schools through in-person visits at each site during the academic school year preceding the intervention. School recruitment meetings were typically attended by the school principal and physical education teacher. Schools received $4,000 to complete the AIM process. LPHA recruitment meetings were attended by agency directors and staff identified as potential AIM facilitators, who were in most cases nurses. Informational flyers explaining the AIM process and Memorandums of Understanding were key artifacts used during recruitment efforts. LPHAs were remunerated at a rate of 10% FTE of the facilitator per each school facilitated (e.g., one school facilitated through AIM by an LPHA employee earning $50,000 resulted in a $5,000 payment to the LPHA).

Local Public Health Agencies staff also participated in a readiness assessment interview during the recruitment phase, which provided an opportunity to discuss their motivations and reservations to participating. LPHAs noted the shared priority of addressing obesity (all five included obesity in their most recent Health Assessment Plans) and the potential benefits of closely collaborating with schools in their service area.

Training and Technical Assistance for LPHAs

Local Public Health Agencies directors designated staff to facilitate the AIM process. LPHA staff were trained through a 5-day training in August and a 1-day booster training midway through the school year. Two facilitators who worked with both cohort 1 and cohort 2 attended a 1-day training focused on revisions from the previous year in lieu of attending the 5-day training a second time. Ongoing support to discuss progress and answer questions consisted of monthly conference calls among facilitators and university staff, and individualized *ad hoc* technical assistance [see (45)].

Process and Outcome Evaluation Design

This study used a process and outcome evaluation approach to monitor and evaluate the implementation of the AIM process (46). Process evaluation efforts, which were guided by the RE-AIM framework (42), began with the recruitment of LPHAs and schools and ended 6 months after all participating schools had completed the AIM process. Outcome evaluation was focused on the implementation of evidence-based practices in participating schools and general satisfaction with the AIM process and facilitators. The RE-AIM framework was selected to guide data collection because it attends to various factors of implementing real-world public health interventions (Reach, Effect, Adoption, Implementation, Maintenance; see **Table 2**). This study was approved by the Colorado Multiple Institution Review Board.

Data Collection

Post-meeting Surveys (AIM Facilitators)

All AIM facilitators (LPHA staff and university staff) completed a post-meeting survey at the end of each AIM meeting. These surveys included attention to logistical aspects of the meeting (date, time, and length of the meeting); facilitator preparation; fidelity to the meeting guide; task force dynamics (member participation and tension during the meeting); and feedback about the meeting agenda and process. There was an average of 33 items per post-meeting survey. Implementation status of changes was included in the final AIM meeting survey. These surveys were completed with a 100% response rate.

Post-intervention Interviews (AIM Facilitators)

All AIM facilitators participated in a semi-structured interview at the end of the intervention. These interviews were held in person at the health agency office or in a community setting and focused on LPHA facilitator perspectives on four topics: (1) facilitation of the AIM process at the school, (2) partnership with the university team, (3) impacts on the agency or its personnel, and (4) suggested improvements to the AIM process.

Post-process Survey (AIM Task Force Members)

Those participating in the AIM process as members of school task forces completed a 53-item survey at the end of the AIM process. Key topics included in this survey were perceptions of the facilitator and overall satisfaction with the AIM process. In total, 80 task force surveys were completed, representing a 100% response rate for task force members in attendance at the final AIM meetings.

Process Documentation

Other data, correspondence, meeting notes, and artifacts that document the process were collected throughout the intervention to inform and contextualize dimensions of the intervention as guided by the RE-AIM framework.

Data Analysis

Evidence-based practices were coded as nutrition or physical activity by the task forces proposing the changes. These practices were then coded to the sub-areas of changes by two researchers. Discrepancies in coding were identified and discussed by raters to determine the final coding. Interviews with LPHAs were transcribed and analyzed using structural, open, and axial coding (47, 48). Two researchers completed the analysis, with regular meetings to identify inconsistencies and discrepancies in coding and to discuss emergent themes (49). Project documents and records were analyzed by researchers to ensure the accurate and complete depiction of the intervention as it unfolded.

RESULTS

Reach

The target region for recruitment included 26 elementary schools. These schools served 4,323 students (48% Hispanic, 66% Free/reduced lunch). Among these schools, 18 (69%) agreed to participate and LPHA staff facilitated 12. A local individual was hired as university staff to facilitate the remaining six schools (see **Figure 1**). Schools that participated in the intervention as facilitated by LPHAs had a slightly higher Hispanic population (49%) and slightly lower free and reduced lunch rate (64%) than the target population (see **Figure 2**).

Effect

The AIM process is designed to expedite the implementation of evidence-based practices that promote nutrition and physical activity for students at participating schools. The implementation status of identified practices was documented at the final meeting of the AIM process using the following options: fully implemented, partially implemented, planned for implementation, and not implemented.

LPHA cohort 1 had an average of 5.20 changes implemented per school; LPHA cohort 2 had an average of 3.29 changes per school. The university-facilitated schools had an average of 3.67 changes fully implemented per school in both cohorts 1 and 2. In total, schools facilitated by LPHAs saw an average of 4.00 changes fully implemented per school, while schools facilitated by university staff had an average of 3.67 changes fully implemented per school. The results of the type of changes implemented are further delineated in **Figure 3**.

Adoption

We attempted to recruit five LPHAs for partnership, and successfully recruited 100% of these LPHAs. In total, these five LPHAs serviced a population of 71,162 across seven counties. While all five LPHAs agreed to partner and implement AIM, two agencies were unable to identify personnel to facilitate all schools in their catchment area. Namely, one agency was able to facilitate just one of the six schools in their region, and another agency was able to facilitate one of the two schools in their region. Both LPHAs cited lack of available qualified personnel as the primary factor that limited their capacity to facilitate AIM in all schools in their regions. Among the 18 schools successfully recruited for participation in the process, the five LPHAs were able to facilitate 12 (67%) of those schools.

Implementation

Number and Length of Meetings

In total, 94 meetings were scheduled with the 12 schools facilitated by LPHAs. Among these, 89 (95%) meetings took place. The six schools facilitated by university staff were scheduled for a total of 48 meetings, and 47 (98%) took place.

Meeting lengths varied between cohorts 1 and 2 due to revisions made to the meeting guide based on feedback from cohort 1. There was no difference in mode for the meeting length between LPHA and university facilitators for either cohort (Cohort 1 mode = 1:46–2:00 h; Cohort 2 mode = 1:01–1:15 h). There was, however, a tendency for the university facilitator meetings to run longer than the LPHA facilitators across both cohorts. This was most pronounced during cohort 2 where the university facilitator meetings skewed longer (right) and the LPHA facilitator meetings skewed shorter (left; see **Figure 4**).

Time Spent Preparing; Feeling Prepared

Facilitators indicated how much time they spent preparing for each meeting. The university facilitator reported spending more than 60 min preparing for 77% of meetings while LPHA facilitators reported spending more than 60 min preparing for 50% of meetings (see **Figure 5.1**). Relatedly, the university facilitator strongly agreed with the statement "I felt very prepared to facilitate this meeting" for 94% of meetings while the LPHA facilitators strongly agreed with that statement for 39% of meetings (see **Figure 5.2**).

Fidelity to Facilitator Guide

Assess, Identify, Make it happen facilitators rated how closely they followed the facilitator guide for each agenda item of each meeting using the following scale: Not at all (0–24%, did not do this part of the meeting); Some (addressed 25%−49% of the items); Mostly (addressed 50%−74% of the items); Completely (addressed 75%−100% of the items). The university facilitator reported 93% of agenda items as "completely" while LPHA facilitators reported 41% of agenda items as "completely" (see **Figure 5.3**).

Idea Sharing and Tension During AIM Meetings

Facilitators also rated the extent to which they agreed or disagreed with two statements: "Most task force members shared their ideas during the meeting" and "There was tension among some of the task force members during the meeting." The university facilitator strongly agreed that most task force members shared their ideas during the meeting 94% of the time, while the LPHA facilitators strongly agreed with this statement 44% of the time (see **Figure 5.4**). The university facilitator also strongly *disagreed* with the statement of tension among task force members 98% of the time, while LPHA facilitators strongly *disagreed* with this statement 79% of the time (see **Figure 5.5**).

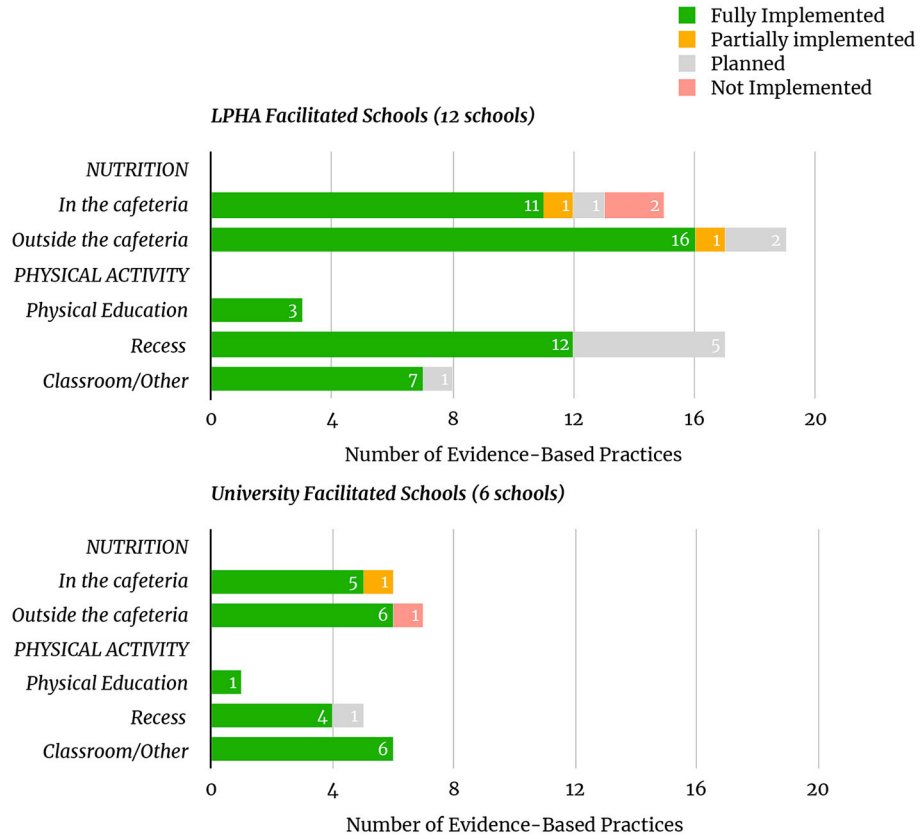


FIGURE 3 | Number and implementation status of EBPs.

Taskforce Satisfaction With the Process and Facilitators

At the end of the AIM process, task force members were invited to participate in a task force survey which included items focused on their satisfaction and interpretations of the AIM process (**Figure 6.1**) and facilitator (**Figures 6.2**, **6.3**). These results show limited difference between satisfaction with the facilitator, although the LPHA-facilitated schools show slightly higher overall satisfaction with the process.

Maintenance

The AIM process and partnerships with LPHAs resulted in several new connections and enduring practices amongst schools and LPHAs. At the close of the initiative, we offered an AIM Do-It-Yourself training and disseminated manuals for applying AIM without the support of a university facilitator. We did not systematically evaluate the uptake of such an approach at schools, however. Other outcomes from the initiative include school districts successfully transitioning AIM task forces into functional wellness teams, and LPHA staff continuing to meet with school district personnel to support them in their wellness efforts. Post-intervention interviews with LPHA staff also expressed optimism on the long-term outcomes for LPHA-school partnerships resulting from this initiative.

Relatedly, a subsequent iteration of AIM was offered 2 years after this initiative was completed in the same region. This version of AIM was altered in focus (from nutrition and physical activity to all components of the Whole School, Whole Community, Whole Child model) (50), scope (from school to district level), and implementation model (from nine, 60–75 min meetings, to three, 6 h meetings facilitated by University staff). Of the 16 school districts that agreed to participate in the initial version of AIM discussed in this study, nine (56%) also participated in this subsequent, extended version of AIM. Further, of the six districts that declined to participate in the initial version of AIM, 4 (67%) agreed to participate in the subsequent, extended version of AIM.

DISCUSSION

Implementing the AIM process in partnership with LPHAs allowed for a more scalable model of the AIM process to be implemented across a large, rural/frontier geographic region with outcomes comparable to previous iterations of AIM. This study raises a few points of ongoing consideration for those engaged in implementing interventions in partnership with local organizations as research intermediaries.

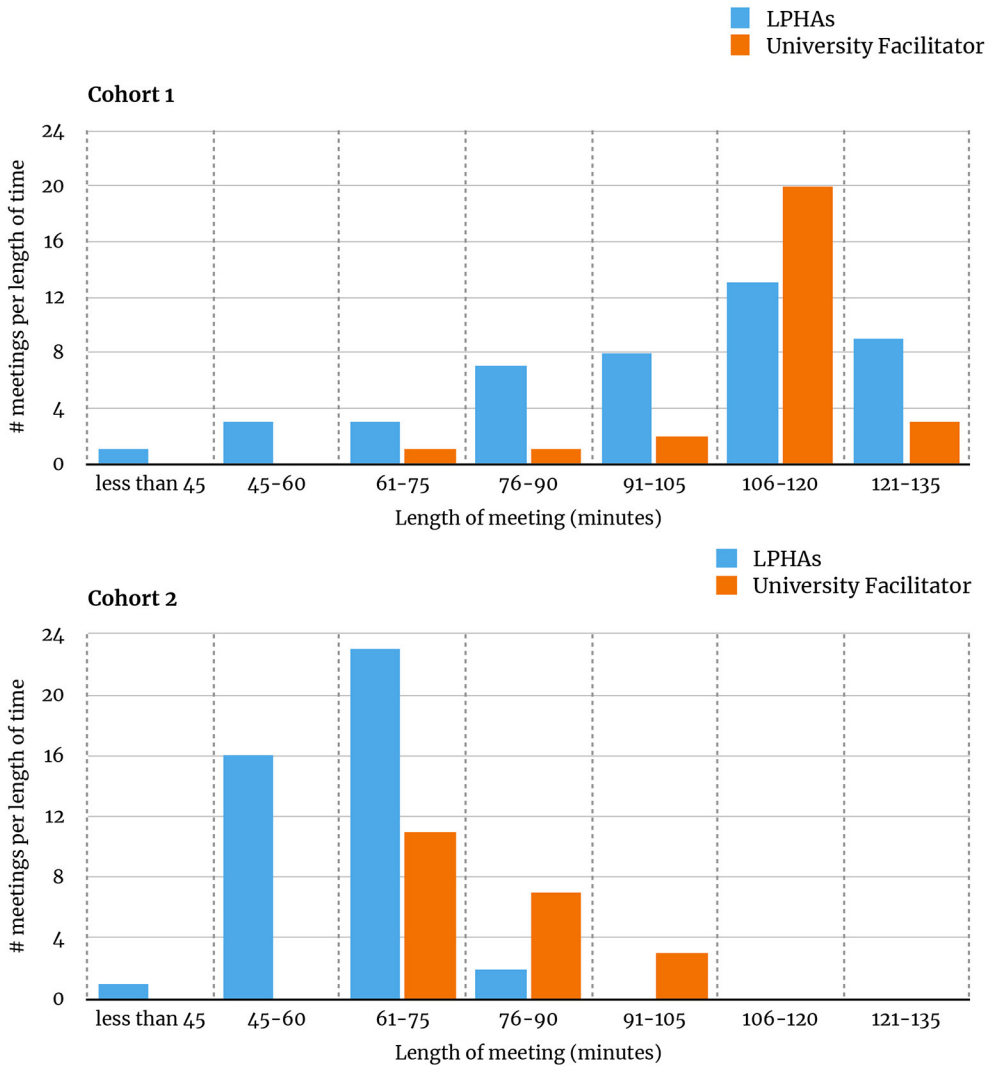


FIGURE 4 | Length of meetings for cohorts 1 and 2.

Comparisons Between University and LPHA Facilitators of AIM

This study demonstrates that LPHAs succeeded in facilitating schools through the AIM process and that schools were successful in implementing EBPs. This positions AIM as a promising model for broader implementation to make schools in rural/frontier communities healthier places for students. There were, however, differences between LPHA and university facilitators in their facilitation of AIM in this initiative. The LPHA facilitators averaged lower marks than the university facilitator on (1) fidelity to the process, (2) the percentage of meetings that took place vs. those that were planned, and (3) the length and completion rate of meetings. Meetings facilitated by LPHAs also reported greater tension and lower incidence of all task force members sharing their opinions during the meetings when compared to meetings guided by the university facilitator. These differences are at odds with the outcome measures, which showed an average of slightly more evidence-based practices implemented with LPHAs (4.00 EBPs per school) than with the university facilitator (3.67 EBPs per school). These results support previous research that suggests intermediaries may be effective in facilitating the uptake of EBPs through community-engaged approaches (31, 32).

Considerations of Fidelity

While fidelity is typically positioned as a key determinant to maintaining desirable outcomes of interventions, this study revealed that higher fidelity to the process as prescribed was not associated with an increased prevalence of desired outcomes (51). From a training and technical assistance perspective, our approach to fidelity was aligned with suggestions that an adaptive approach to fidelity is essential when scaling up programming (52). In this initiative, facilitators were encouraged to waver from the facilitator guide when they considered it in the best interest of the process and task force. In some

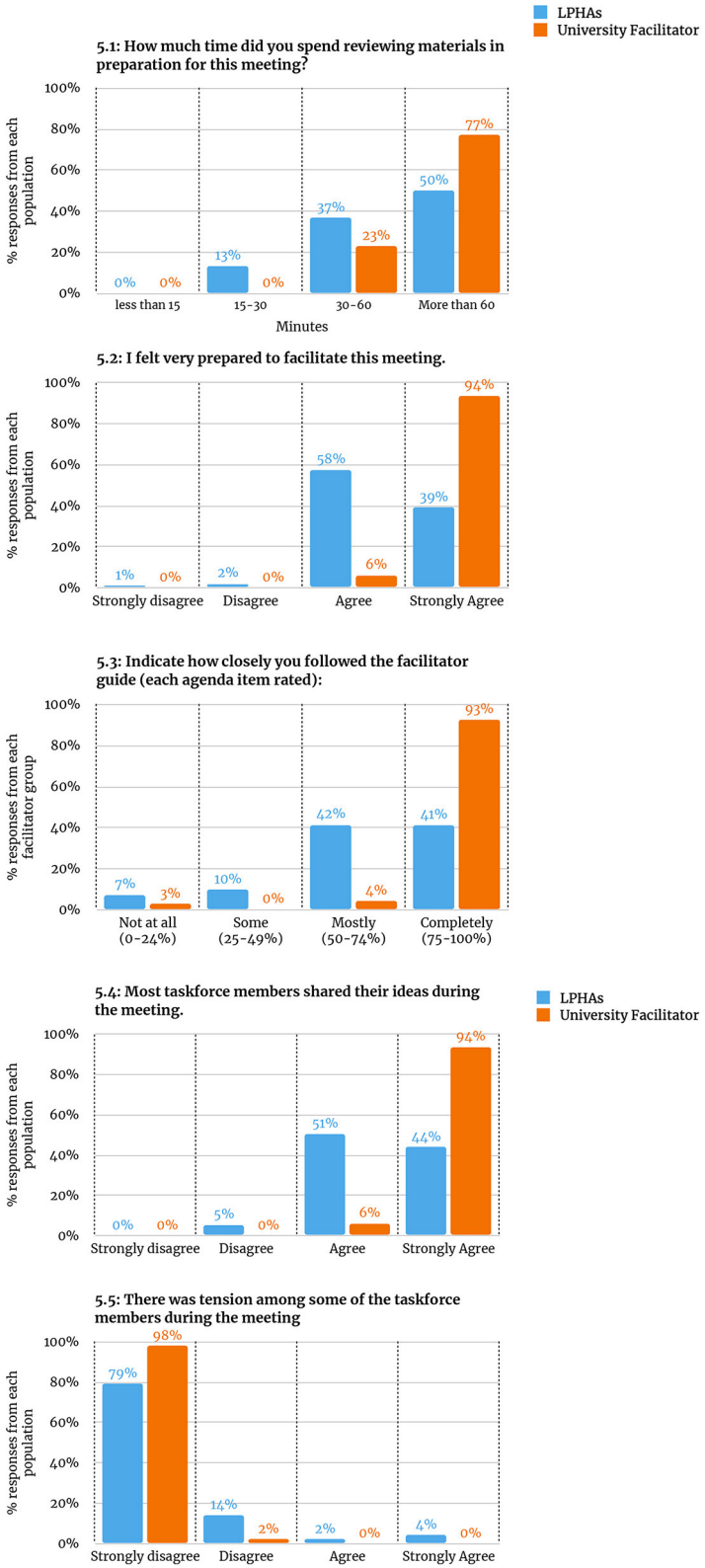


FIGURE 5 | Facilitator ratings. **5.1:** How much time did you spend reviewing materials in preparation for this meeting? **5.2:** I felt very prepared to facilitate this meeting. **5.3:** Indicate how closely you followed the facilitator guide (each agenda item rated). **5.4:** Most taskforce members shared their ideas during the meeting. **5.5:** There was tension among some of the taskforce members during the meeting.

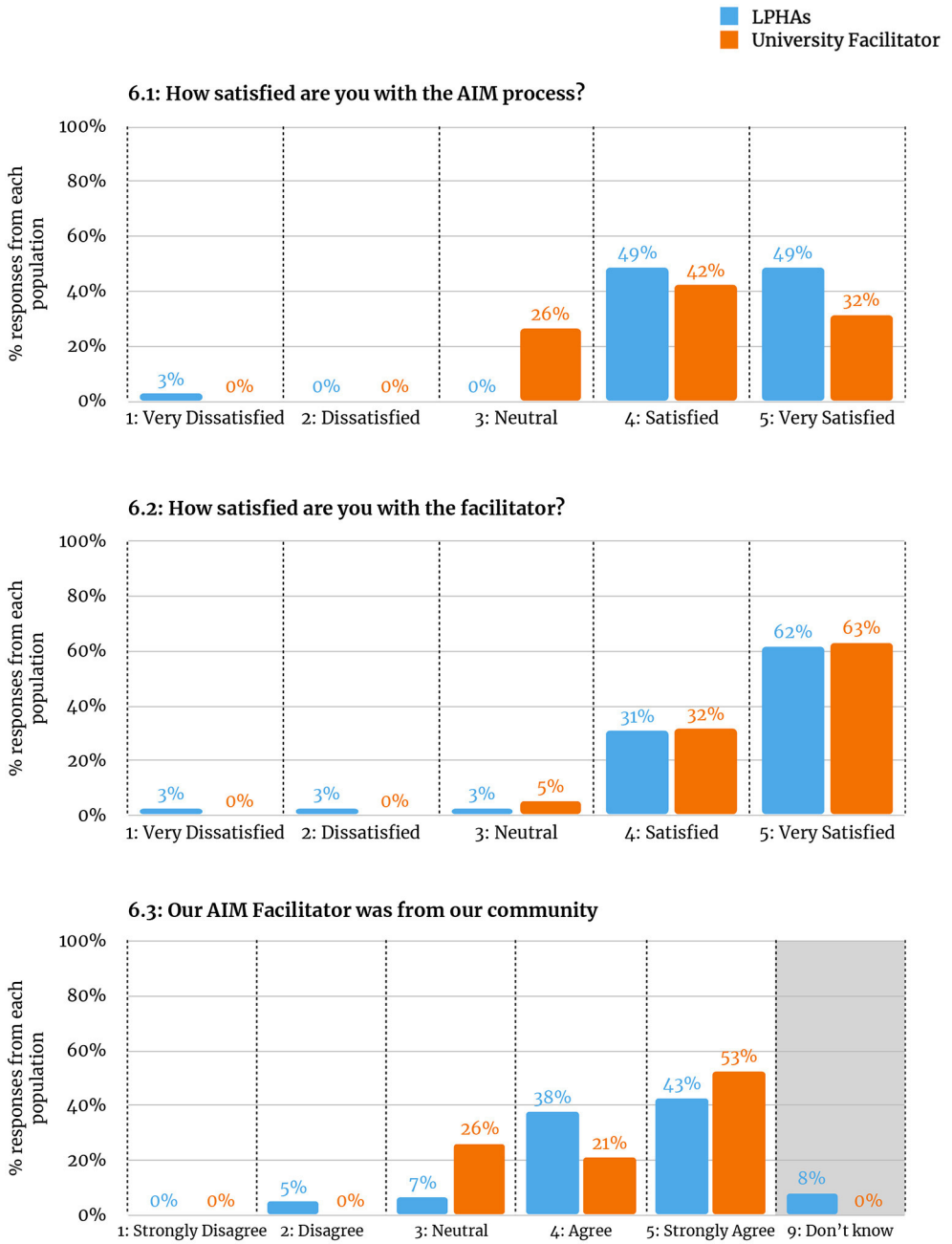


FIGURE 6 | Taskforce member ratings. **6.1:** How satisfied are you with the AIM process? **6.2:** How satisfied are you with the facilitator? **6.3:** Our AIM Facilitator was from our community.

instances, facilitators were supported in making more significant alterations to the process as long as critical activities of AIM were retained. Anecdotal evidence from this initiative supports the effectiveness of this adaptive approach to process fidelity. For example, there were instances in this implementation of AIM in which facilitators' high fidelity to the process was viewed as inflexibility to the local context and considered a detriment to quality by task force members. Conversely, approaching the AIM process with flexibility to the needs and contexts of LPHA and school partners was viewed as critical to ensuring the success of the initiative. These findings inspire a continued consideration of fidelity in the context of health-based interventions in partnership with community organizations in school settings (53).

Importance of Effective Partnerships, Scalability Considerations, Training, and Technical Assistance

This study also emphasizes the benefits of adopting a flexible and supportive approach to partnering with community-based research intermediaries. In retrospect, we view approaches to (1) adapting to local capacity, (2) scalability, and (3) training and technical assistance, as worthy of emphasis.

Adapting to Local Capacity

Adapting the intervention plan based on the capacity of LPHAs was critical to ensuring success and promoting the greatest reach possible. For instance, although it was not the intended implementation model, we hired a community affiliate to operate as facilitator to account for the lack of available personnel in two LPHAs. Flexibility in implementation with this agency allowed us to still reach the target audience of schools in this region despite a lack of capacity at the LPHA.

Scalability

The effort to create a scalable model was executed with consideration of key dimensions of scalability [see (41)]. Revisions to the process that better positioned it for success in this scalable model include developing a new training and support model, revamping materials (meeting guide, website, supportive materials), amending the method of implementation (meeting evaluations, school surveys to generate automated reports), and, perhaps most importantly, reducing the amount of time required to complete the process. In the context of rural LPHAs and schools, it is important that initiatives that add to the existing workload honor the time constraints and responsibilities of existing partners and take efforts to promote the greatest efficiency possible. This approach was also more cost-efficient than previous versions of the process (29).

Training and Technical Assistance

Finally, many LPHA staff reported that the training and technical assistance they received throughout this intervention was both critical in aiding their successful facilitation and dissimilar to much of the training and support they had received in the past. This underscores the importance of attending to training and technical assistance when seeking to expand the reach of a model or intervention. In this case, a training and technical assistance approach that draws on various theories of education, training, and professional development was found to develop the necessary knowledge and skills in facilitators. This contributes to discourse concerning the importance of technical assistance in implementing new interventions and programs (54, 55).

CONCLUSIONS

Implementing AIM with rural LPHAs as facilitators was an effective method of implementing evidence-based practices for physical activity and nutrition in rural elementary schools. The results outlined above support the continued exploration of partnerships with LPHAs as research intermediaries and the promise of further applications of AIM as a catalyst of expediting the research to practice delay.

Future studies may further engage in the question of fidelity in implementation science. Namely, the findings of this study support the importance of discourse that interrogates the notion of fidelity to interventions alongside responsiveness to the context and locality in which an intervention is implemented (51). Other research may address how partnerships with LPHAs can be leveraged and best structured to address areas of need in rural contexts (e.g., professional development needs, lack of funding, resources, or personnel) and promote positive outcomes to address a compendium of health behaviors and conditions.

DATA AVAILABILITY STATEMENT

The datasets generated and analyzed during this study are not publicly available due to considerations of confidentiality. De-identified selections of data may be made available from the corresponding author on reasonable request and in compliance with COMIRB.

ETHICS STATEMENT

This study was reviewed and approved by the Colorado Multiple Institution Review Board (COMIRB). Participants provided their written informed consent to participate int his study.

AUTHOR CONTRIBUTIONS

BI, CL, and EB all had central roles in designing and implementing the intervention, collecting and analyzing data, and drafting the manuscript. All authors read and approved the final manuscript.

FUNDING

This work was made possible with funding from the Colorado Health Foundation (PI: EB, Grant ID: 5733).

ACKNOWLEDGMENTS

We wish to acknowledge partnering Local Public Health Agencies, partnering Elementary schools, and colleagues of the Rocky Mountain Prevention Research Center and the Center for Rural School Health and Education.

REFERENCES

1. Probst JC, Barker JC, Enders A, Gardiner P. Current state of child health in rural america: how context shapes children's health. *J Rural Health.* (2018) 34:s3–12. doi: 10.1111/jrh.12222
2. Flórez KR, Katic BJ, López-Cevallos DF, Murillo R, Cancel-Tirado D, Aponte-Soto L, et al. The double burden of food insecurity and obesity among Latino youth: Understanding the role of generational status. *Pediatr Obes.* (2019) 14:e12525. doi: 10.1111/ijpo.12525
3. Drewnowski A. The economics of food choice behavior: why poverty and obesity are linked. *Nestle Nutr Inst Workshop Ser.* (2012) 73:95–112. doi: 10.1159/000341303
4. Story M, Nanney MS, Schwartz MB. Schools and obesity prevention: creating school environments and policies to promote healthy eating and physical activity. *Milbank Q.* (2009) 87:71–100. doi: 10.1111/j.1468-0009.2009.00548.x
5. Tieken MC. *Why Rural Schools Matter.* University of North Carolina Press (2014).
6. Demetriou Y, Höner O. Physical activity interventions in the school setting: a systematic review. *Psychol Sport Exerc.* (2012) 13:186–96. doi: 10.1016/j.psychsport.2011.11.006
7. Scherr RE, Linnell JD, Dharmar M, Beccarelli LM, Bergman JJ, Briggs M, et al. A multicomponent, school-based intervention, the shaping healthy choices program, improves nutrition-related outcomes. *J Nutr Educ Behav.* (2017) 49:368–79.e1. doi: 10.1016/j.jneb.2016.12.007
8. Inman DD, van Bakergem KM, LaRosa AC, Garr DR. Evidence-based health promotion programs for schools and communities. *Am J Prev Med.* (2011) 40:207–19. doi: 10.1016/j.amepre.2010.10.031
9. Kropski JA, Keckley PH, Jensen GL. School-based obesity prevention programs: an evidence-based review. *Obesity.* (2008) 16:1009–18. doi: 10.1038/oby.2008.29
10. Brennan LK, Brownson RC, Orleans CT. Childhood obesity policy research and practice: evidence for policy and environmental strategies. *Am J Prev Med.* (2014) 46:e1–16. doi: 10.1016/j.amepre.2013.08.022
11. Brown T, Summerbell C. Systematic review of school-based interventions that focus on changing dietary intake and physical activity levels to prevent childhood obesity: an update to the obesity guidance produced by the National Institute for Health and Clinical Excellence. *Obes Rev.* (2009) 10:110–41. doi: 10.1111/j.1467-789X.2008.00515.x
12. Condon EM, Crepinsek MK, Fox MK. School meals: Types of foods offered to and consumed by children at lunch and breakfast. *J Am Diet Assoc.* (2009) 109(2 Suppl):S67–78. doi: 10.1016/j.jada.2008.10.062
13. Wansink B, Just D. Healthy foods first: students take the first lunchroom food 11% more often than the third. *J Nutr Educ Behav.* (2011) 43:S8. doi: 10.1016/j.jneb.2011.03.032
14. Getlinger MJ, Laughlin VT, Bell E, Akre C, Arjmandi BH. Food waste is reduced when elementary-school children have recess before lunch. *J Am Diet Assoc.* (1996) 96:906–8. doi: 10.1016/S0002-8223(96)00245-3
15. Hakim SM, Meissen G. Increasing consumption of fruits and vegetables in the school cafeteria: the influence of active choice. *J Health Care Poor Underserved.* (2013) 24(2 Suppl), 145–57. doi: 10.1353/hpu.2013.0109
16. Turner L, Chriqui JF, Chaloupka FJ. Classroom parties in US elementary schools: the potential for policies to reduce student exposure to sugary foods and beverages. *J Nutr Educ Behav.* (2013) 45:611–9. doi: 10.1016/j.jneb.2013.04.261
17. Patel AI. A trial of the efficacy and cost of water delivery systems in San Francisco Bay Area Middle Schools, 2013. *Prev Chronic Dis.* (2016) 13:E88. doi: 10.5888/pcd13.160108
18. Briefel RR, Crepinsek MK, Cabili C, Wilson A, Gleason PM. School food environments and practices affect dietary behaviors of US public school children. *J Am Diet Assoc.* (2009) 109(2 Suppl):S91–107. doi: 10.1016/j.jada.2008.10.059
19. Barroso CS, McCullum-Gomez C, Hoelscher DM, Kelder SH, Murray NG. Self-reported barriers to quality physical education by physical education specialists in Texas. *J Sch Health.* (2005) 75:313–9. doi: 10.1111/j.1746-1561.2005.tb07348.x
20. Sallis JF, McKenzie TL, Alcaraz JE, Kolody B, Faucette N, Hovell MF. The effects of a 2-year physical education program (SPARK) on physical activity and fitness in elementary school students. Sports, play and active recreation for kids. *Am J Public Health.* (1997) 87:1328–34. doi: 10.2105/AJPH.87.8.1328
21. Wechsler H, Devereaux RS, Davis M, Collins J. Using the school environment to promote physical activity and healthy eating. *Prev Med.* (2000) 31:S121–37. doi: 10.1006/pmed.2000.0649
22. Ramstetter CL, Murray R, Garner AS. The crucial role of recess in schools. *J Sch Health.* (2010) 80:517–26. doi: 10.1111/j.1746-1561.2010.00537.x
23. Kibbe DL, Hackett J, Hurley M, McFarland A, Schubert KG, Schultz A, et al. Ten Years of TAKE 10!(®): integrating physical activity with academic concepts in elementary school classrooms. *Prev Med.* (2011) 52(Suppl 1):S43–50. doi: 10.1016/j.ypmed.2011.01.025
24. Benden ME, Zhao H, Jeffrey CE, Wendel ML, Blake JJ. The evaluation of the impact of a stand-biased desk on energy expenditure and physical activity for elementary school students. *Int J Environ Res Public Health.* (2014) 11:9361–75. doi: 10.3390/ijerph110909361
25. Committee on Physical Activity and Physical Education in the School Environment, Food and Nutrition Board, and Institute of Medicine. *Educating the Student Body: Taking Physical Activity and Physical Education to School* (Kohl HW, Cook HD, editors). Washington, DC: National Academies Press (2013). Available online at: http://www.ncbi.nlm.nih.gov/books/NBK201500/ (accessed November 1, 2021).
26. Barnes C, McCrabb S, Stacey F, Nathan N, Yoong SL, Grady A, et al. Improving implementation of school-based healthy eating and physical activity policies, practices, and programs: a systematic review. *Transl Behav Med.* (2021) 11:1365–410. doi: 10.1093/tbm/ibab037
27. Green LW, Ottoson JM, García C, Hiatt RA, Roditis ML. Diffusion theory and knowledge dissemination, utilization and integration. *Front Public Health Ser Syst Res.* (2014) 3:3. doi: 10.1146/annurev.publhealth.031308.100049
28. Kessler R, Glasgow RE. A proposal to speed translation of healthcare research into practice: dramatic change is needed. *Am J Prev Med.* (2011) 40:637–44. doi: 10.1016/j.amepre.2011.02.023
29. Belansky ES, Cutforth N, Chavez R, Crane LA, Waters E, Marshall JA. Adapted intervention mapping: a strategic planning process for increasing physical activity and healthy eating opportunities in schools via environment and policy change. *J Sch Health.* (2013) 83:194–205.
30. Wolfenden L, Nathan NK, Sutherland R, Yoong SL, Hodder RK, Wyse RJ, et al. Strategies for enhancing the implementation of school-based policies or practices targeting risk factors for chronic disease. *Cochrane Database Syst Rev.* (2017) 2017:CD011677. doi: 10.1002/14651858.CD011677.pub2
31. Franks RP, Bory CT. Strategies for developing intermediary organizations: considerations for practice. *Fam Soc.* (2017) 98:27–34. doi: 10.1606/1044-3894.2017.6
32. D'Angelo G, Pullmann MD, Lyon AR. Community engagement strategies for implementation of a policy supporting evidence-based practices: a case study of washington state. *Adm Policy Ment Health Ment Health Ser Res.* (2017) 44:6–15. doi: 10.1007/s10488-015-0664-7
33. Sprague Martinez L, Rapkin BD, Young A, Freisthler B, Glasgow L, Hunt T, et al. Community engagement to implement evidence-based practices in the HEALing communities study. *Drug Alcohol Depend.* (2020) 217:108326. doi: 10.1016/j.drugalcdep.2020.108326
34. Bettenhausen JL, Winterer CM, Colvin JD. Health and poverty of rural children: an under-researched and under-resourced vulnerable population. *Acad Pediatr.* (2021) 21(8, Supplement):S126–33. doi: 10.1016/j.acap.2021.08.001
35. CDC – *10 Essential Public Health Services—CSTLTS.* (2021). Available online at: https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html (accessed November 1, 2021).
36. Rosenblatt RA, Casey S, Richardson M. Rural-urban differences in the public health workforce: local health departments in 3 rural western states. *Am J Public Health.* (2002) 92:1102–5. doi: 10.2105/AJPH.92.7.1102
37. Turner AM, Stavri Z, Revere D, Altamore R. From the ground up: Information needs of nurses in a rural public health department in Oregon. *J Med Libr Assoc.* (2008) 96:335–42. doi: 10.3163/1536-5050.96.4.008
38. Institute of Medicine (US) Committee on Educating Public Health Professionals for the 21st Century; Gebbie K, Rosenstock L, Hernandez LM. Public health agencies: their roles in educating public health professionals. In: *Who Will Keep the Public Healthy? Educating Public Health Professionals For*

the 21st Century. Washington, DC: National Academies Press (2003). https://www.ncbi.nlm.nih.gov/books/NBK221185/ (accessed November 1, 2021).
39. Leider JP, Meit M, McCullough JM, Resnick B, Dekker D, Alfonso YN, et al. The state of rural public health: enduring needs in a new decade. *Am J Public Health.* (2020) 110:1283–90. doi: 10.2105/AJPH.2020.305728
40. Cottrell L, Northrup K, Wittberg R. Challenges and lessons learned from a prevention research center partnership. *Am J Prev Med.* (2017) 52:S255–7. doi: 10.1016/j.amepre.2016.08.016
41. Milat AJ, King L, Bauman AE, Redman S. The concept of scalability: Increasing the scale and potential adoption of health promotion interventions into policy and practice. *Health Promot Int.* (2013) 28:285–98. doi: 10.1093/heapro/dar097
42. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health.* (1999) 89:1322–7. doi: 10.2105/AJPH.89.9.1322
43. Damschroder L, Hall C, Gillon L, Reardon C, Kelley C, Sparks J, et al. (2015). The consolidated framework for implementation research (CFIR): progress to date, tools and resources, and plans for the future. *Implement Sci.* (2015) 10:A12. doi: 10.1186/1748-5908-10-S1-A12
44. Robert Wood Johnson Foundation. *County health rankings*. County Health Rankings and Roadmaps (2020). Available online at: https://www.countyhealthrankings.org/reports/state-reports (accessed November 1, 2021).
45. Meyers DC, Durlak JA, Wandersman A. The quality implementation framework: A synthesis of critical steps in the implementation process. *Am J Community Psychol.* (2012) 50:462–80. doi: 10.1007/s10464-012-9522-x
46. Handley MA, Gorukanti A, Cattamanchi A. Strategies for implementing implementation science: a methodological overview. *Emerg Med J.* (2016) 33:660–4. doi: 10.1136/emermed-2015-205461
47. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research* (4. paperback printing). Chicago, IL: Aldine (2009).
48. Tolley EE, Ulin PR, Mack N, Robinson ET, Succop SM. *Qualitative Methods in Public Health: A Field Guide For Applied Research*, 2nd ed. Hoboken, NJ: Wiley (2016).
49. Houston SD, Hyndman J, McLean J, Jamal A. The methods and meanings of collaborative team research. *Qual Inq.* (2010) 16:285–97. doi: 10.1177/1077800409346411
50. Lewallen TC, Hunt H, Potts-Datema W, Zaza S, Giles W. The whole school, whole community, whole child model: a new approach for improving educational attainment and healthy development for students. *J Sch Health.* (2015) 85:729–39. doi: 10.1111/josh.12310
51. Lewis CC, Lyon AR, McBain SA, Landes SJ. Testing and exploring the limits of traditional notions of fidelity and adaptation in implementation of preventive interventions. *J Prim Prev.* (2019) 40:137–41. doi: 10.1007/s10935-019-00539-2
52. Pérez D, Van der Stuyft P, Zabala MC, Castro M, Lefèvre P. A modified theoretical framework to assess implementation fidelity of adaptive public health interventions. *Implement Sci.* (2016) 11:91. doi: 10.1186/s13012-016-0457-8
53. Carroll C, Patterson M, Wood S, Booth A, Rick J, Balain S. A conceptual framework for implementation fidelity. *Implement Sci.* (2007) 2:40. doi: 10.1186/1748-5908-2-40
54. Butterfoss FD. The coalition technical assistance and training framework: Helping community coalitions help themselves. *Health Promot Pract.* (2004) 5:118–26. doi: 10.1177/1524839903257262
55. Chaple M, Sacks S. The impact of technical assistance and implementation support on program capacity to deliver integrated services. *J Behav Health Serv Res.* (2016) 43:3–17. doi: 10.1007/s11414-014-9419-6

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

frontiers | Frontiers in Health Services

TYPE Original Research
PUBLISHED 15 May 2023
DOI 10.3389/frhs.2023.1155941

OPEN ACCESS

EDITED BY
Susan S. Garfield,
ey US, United States

REVIEWED BY
Camilla Falivena,
CERGAS SDA Bocconi, Italy
Natasha Eslami,
Ernst and Young, United States

*CORRESPONDENCE
Lauren A. Taylor
✉ lauren.taylor@nyulangone.org

RECEIVED 01 February 2023
ACCEPTED 03 April 2023
PUBLISHED 15 May 2023

CITATION
Taylor LA, Aveling E-L, Roberts J, Bhuiya N, Edmondson A and Singer S (2023) Building resilient partnerships: How businesses and nonprofits create the capacity for responsiveness.
Front. Health Serv. 3:1155941.
doi: 10.3389/frhs.2023.1155941

Building resilient partnerships: How businesses and nonprofits create the capacity for responsiveness

Lauren A. Taylor[1]*, Emma-Louise Aveling[2], Jane Roberts[3], Nazmim Bhuiya[4], Amy Edmondson[5] and Sara Singer[6]

[1]Department of Population Health, NYU Grossman School of Medicine, New York, NY, United States, [2]Department of Health Policy and Management, Harvard TH Chan School of Public Health, Boston, MA, United States, [3]Survey and Qualitative Methods Core, Division of Population Sciences, Dana–Farber Cancer Institute, Boston, MA, United States, [4]MassHealth, Executive Office of Health & Human Services, Boston, MA, United States, [5]Harvard Business School, Boston, MA, United States, [6]Department of Medicine, Stanford University School of Medicine, Stanford, CA, United States

Increasingly, businesses are eager to partner with nonprofit organizations to benefit their communities. In spite of good intentions, differences between nonprofit and business organizations can limit the ability of potential partnerships to respond to a changing economic and public health landscape. Using a retrospective, multiple-case study, we sought to investigate the managerial behaviors that enabled businesses and nonprofits to be themselves *together* in sustainable partnerships. We recruited four nonprofit-business partnerships in the Boston area to serve as cases for our study. Each was designed to address social determinants of health. We thematically analyzed qualitative data from 113 semi-structured interviews, 9 focus groups and 29.5 h of direct observations to identify organizational capacities that build resilient partnerships. Although it is common to emphasize the similarities between partners, we found that it was the acknowledgement of difference that set partnerships up for success. This acknowledgement introduced substantial uncertainty that made managers uncomfortable. Organizations that built the internal capacity to be responsive to, but not control, one another were able to derive value from their unique assets.

KEYWORDS

business, nonprofit, strategic partnership, community health, management, health equity, sustainability

Introduction

Amidst intensifying racial, economic, environmental and health crises, businesses are facing increasing pressure to demonstrate to various stakeholders that they are taking their social responsibility seriously (1). One way to do this is to develop relationships with nonprofit organizations whose full-time job it is to undertake community improvement initiatives such as improving access to nutritious food, educational opportunities for Black and Brown youth and air quality in cities. The quality and nature of these relationships can vary widely (2–7). In some cases, the relationship is largely transactional and involves only the occasional transfer of funds to a portfolio of grantees. In other cases, partnerships can last many years and involve many more touchpoints. Business-nonprofit relationships are a topic of enduring academic interest. To date, scholars have established that these relationships are challenged by the competing institutional logics in nonprofit

vs. business sectors and power imbalances derived from financial asymmetries (8–12). Managers are willing to endure these challenges on the basis that the relationship offers each partner access to novel resources (e.g., funds but also potentially networks, expertise, social capital etc) within the other (13, 14). Yet resource dependencies may also intensify the adverse impacts of business and nonprofits' divergent logics (8).

The existing literature points to two approaches to effectively managing the competing logics inherent in business-nonprofit relationships, which can appear contradictory. One approach, emphasized in the practitioner literature but found in some scholarly writing, asks business and nonprofit partners to engage in advanced planning to ensure that goals and work plans are shared by all involved. In one instance, authors *define* a meaningful partnership as commitment to a common goal, including joint provision of resources and sharing of risks "that was directed from the outset (15)." One of James Austin's early, seminal works on the topic lends credibility to this approach, suggesting that "The more specifically one can articulate expected benefits at the outset, the greater guidance the partnership will have (16)." This approach often imports an assumption that partnerships can be understood as having a life-cycle, wherein they progressively deepen over time until dissolution at the discretion of the management team. Moreover, it implies that the business and the nonprofit should be able to employ strategic management techniques to be the masters of their own fate (17).

A second approach for managing the inherent complexity of business-nonprofit relationships focuses on the need for continual learning and a more emergent approach to planning (18, 19). This approach emphasizes *differences* between partners as the organizing principle, wherein the value of partnership lies in its ability to exploit and capitalize on these differences. As such, the inherent tensions of partnership work are an inescapable pre-requisite, and respecting, rather than erasing, difference should be a central managerial objective (20) towards developing a resilient partnership. This more exploratory approach to managing business-nonprofit partnerships allows a role for environmental uncertainty and assumes less about the way in which the relationship may become more, or less, integrated over time. In this sense, the business-nonprofit partnership literature is following recent work on the need for greater flexibility in order to ensure the success of for-profit joint ventures (21).

Our work draws from this second approach to managing the inescapable tensions in business-nonprofit partnerships for the purposes of health improvement. Each of our case studies began with an acknowledgement that businesses and nonprofits often offered radically different working environments. Before partners could leverage those differences, they needed first to be acknowledged and explored (20). Importantly, we found it counterproductive, if not impossible, for business and nonprofit partners to try and erase these differences. Previous studies have identified general inter-organizational processes for managing partnerships that are premised on difference, such as building trust, enabling communication and facilitating mutual understanding. Some have advocated partnering entities to develop capacities for learning or partnering across organizational boundaries (18). Considerably fewer have specified the intra-organizational capacity that businesses and nonprofits must develop to manage successful inter-organizational partnerships.

Although the public discourse on health services frequently references the value of partnership—as well as related terms such as collaboration and coalition—indiscriminate use of the term "partnership" to describe a broad swath of collaborative engagements has muddied the water when it comes to identifying the challenges and solutions to establishing and sustaining specific forms of engagement. Indeed the word has been used in reference to everything from contractual or vendor-style relationships to long-term, deeply collaborative relationships. Studies of public-private partnerships primarily include governments and businesses, overlooking the nonprofit sector, lending further opacity to any rhetorical shorthand. We focus our analysis on what we call "strategic partnerships" between businesses and nonprofits rather than the less intensive, but more common grantor-grantee relationships. We define strategic partnerships as inter-organizational collaborations which are deliberately undertaken to advance the positon of participating organizations. Doing so is appropriate for the way in which many businesses are re-conceptualizing their philanthropic or corporate social responsibility (CSR) engagement away from a portfolio approach and towards fewer and deeper alliances. High-profile strategic partnerships include Google's work with the Trevor Project, a confidential crisis text line for LGBTQ youth (22), and Timberland's relationship with educational nonprofit City Year (23). These "fewer, deeper" partnerships often include contributions from the business that extend beyond financial commitments, including board memberships, volunteer opportunities for employees, matching contribution programs, and co-branding opportunities.

While prior research has focused on the initiation and early stages of the partnership (24), reviews of cross-sector collaborations emphasize the need for longitudinal case studies rather than point-in-time research to illuminate the dynamic nature of partnerships and lend greater insight into what makes the arrangement sustainable over time (5, 25, 26). We aim to partly fill this gap by summarizing the findings of our retrospective investigation of four strategic partnerships between business and nonprofits, all of which had existed for 6–10 years at the time of study. The substantial duration of collaboration, in the face of inevitable environmental and organization-specific changes, is what made the partnerships "resilient" in our view. While this study is not prospectively longitudinal, our cases were selected and data collection instruments were designed to harvest insights from businesses and nonprofits that had been in relationship with one another for several years.

We set out to investigate what makes businesses and nonprofits successful in building and sustaining strategic partnerships with one another. To do so, it was critical to first confront that the cultural and cognitive distance between business and nonprofit organizations. This distance presents challenges above and beyond those typically found in business-to-business joint ventures or strategic partnerships (27–30). By dint of their differences from one another, even skilled and well-intentioned

managers found this work difficult. We outline the challenges associated with business-nonprofit partnerships, which largely confirm previous findings, in Part 1.

In Part 2, we outline lessons for how businesses and nonprofits can develop the capacity to be an effective strategic partner. These insights run counter to much of common managerial practice. We found that managers' willingness to accept an open-ended future for their relationship with nonprofits was key to their success over the long term but also introduced an uncomfortable element of uncertainty. The very same disruptions that spurred these partnerships may challenge both partners' ability to meet their equity commitments. The COVID-19 pandemic has presented economic challenges to business and nonprofit organizations alike (31) In order to build resilience in the midst of this uncertainty, businesses and nonprofits needed to develop the capacity to be responsive to their partners. We surmise that standard accounts of business-nonprofit relationships have overlooked, or at least downplayed, the need for *both* partners to develop new capacities in part because analyses undertaken through the lens of resource dependence so often magnify the financial dependence, and therefore willingness to change, of the nonprofit partner (18). In contrast, the business is imagined to be a resource*ful* and therefore more static partner. Our fieldwork indicated that this is an oversight and the business' intra-firm development was just as important as the nonprofits' intra-firm efforts or the inter-organizational practices that have been described at some length by others. Based on our fieldwork, we provide several examples of how successful strategic partnerships built this "capacity for responsiveness" internally.

Materials and methods

In this paper we summarize findings based on analysis of four case studies examining the role of cross-sector collaboration as a means to promoting heath equity in the city of Boston (**Table 1**). We analyzed qualitative data from 113 semi-structured interviews with business, nonprofit, and public sector leaders and employees from 42 organizations involved in long-term collaborative initiatives. Additionally, we conducted 10 focus groups. 9 of those focus groups were with Boston public school teens and young adults ($n = 40$) who used, or were impacted by, the services or activities offered by case study initiatives. 1 focus group was with a group of employees of the retail nonprofit operation in Case 2. We did no focus groups in Case 4 because the population whose health was targeted for improvement were young (elementary school) children. Finally, we conducted 29.5 h of direct observations of initiative activities (e.g., service delivery activities, stakeholder meetings), which provided additional perspective on the nature and mechanisms of collaboration.

We identified candidate cases *via* extensive web-searches of organizations and nonprofits engaged in strategic partnerships targeting health and well-being, triangulated with information from discussions with locally knowledgeable members of Harvard University's business and public health communities, the local business and philanthropic community, city officials, and the study's advisory council, which was comprised of leaders of business, non-profit organizations and consortia from across the country.

TABLE 1 Data collection by case.

Case 1—The Arm's Length Model Financial Services Business and Nonprofit Partners *Data collected Winter 2018–Winter 2019*			
	Organization	Role (s)	*n*
Interviews			
	Focal for profit business	Senior leaders, managers (CSR, Marketing depts.)	11
	Focal nonprofit partners	Senior leaders, frontline staff	24
Focus groups			
	Nonprofit partners	Youth/young adult initiative participants	6 groups
Observation			18.5 h
Case 2—The Operational Partnership Model Retail Nonprofit (Generated revenue through sales; registered as a 501c3) *Data collected Spring 2018–Winter 2019*			
	Organization	Role (s)	*n*
Interviews			
	Focal nonprofit	Senior team, middle management	8
		Board members	3
	For-profit partners	Directors/senior leaders	2
	Nonprofit partners	Senior leaders	4
Focus Groups			
	Focal nonprofit	Employees	1 group
Observation			5 h
Case 3—The Incubator Model Industrials Business and Education Nonprofit *Data collected Spring 2018–Winter 2019*			
	Organization	Role (s)	*n*
Interviews			
	Focal for profit business	Senior leaders, staff	6
	Focal nonprofit organization	Senior leaders, middle management, frontline staff, board members	12
	Public sector organizations	Senior leaders, staff	7
Focus groups			
	Nonprofit/public sector	Youth/young adult program participants	3 groups
Observations			6.5 h
Case 4—The Adoption Model International Apparel Business and Health Nonprofit *Data Collected Spring 2019–Winter 2019*			
	Organization	Role (s)	*n*
Interviews			
	Focal Nonprofit	Senior leaders, managers, staff	9
	Focal For-profit business partner	Senior leaders, staff, board members	6
	Public sector organizations	Senior leaders, staff	9
	Nonprofit partners	Senior leader, manager, board member	4
	For profit funding partners	Senior leaders, staff	4
Observation			5 h

Our research team selected case study candidates based on a series of criteria which were refined over the course of our case identification process in an effort to balance the focus and breadth of our study. We ultimately decided that in order to be considered, partnerships needed to demonstrate the following: (1) *locale*: the partnership must be between Boston-based organizations and focus on improving the conditions of the Boston community, (2) *composition*: the partnership must have involved at least one business and one or more nonprofit organizations (and may include government), (3) *minimum level of engagement*: the partnership work must have entailed more than financial transfers (eg. not solely a philanthropic funding relationship) (4) *duration*: the partnership must have been ongoing for several years and (5) *novelty*: the partnership must not have been previously studied by an academic research team. These criteria were chosen in order to keep certain elements of the research context consistent. We also sought to achieve diversity amongst the cases in two, major respects: (1) *level of integration*: the nature of the relationship between the business and nonprofit partners at the point of data collection and (2) *social determinant of health focus*: the social determinant of health focus of the collaboration (e.g., nutrition, physical activity etc).

The research team used its judgement to determine how many and which inclusion criteria would narrow the scope of our inquiry sufficiently to develop new insights about business-nonprofit partnerships. The axes of difference were chosen to reduce the risk of observing and interpreting insights about a specific level of integration or social domain as a generalizable finding about the more general category of business-nonprofit partnerships. Using our judgement to determine the appropriate selection parameter introduces a source of bias to the design but is widely accepted in qualitative research that is intended to generate insight rather than test relational hypotheses. These insights can be subsequently tested in quantitative analyses with sampling strategies better suited for causal inference.

The four resulting cases differed in terms of their level of organizational integration and can be situated on a continuum (Figure 1). We use the terms "more" and "less" integrated throughout in reference to the intensity of collaboration between the partners. In doing so, we draw on James Austin's work outlining a litany of dimensions on which integration varies, including (but not limited to) the level of engagement, magnitude of resources, scope of activities, managerial complexity and strategic value (32). We depart from Austin's previous work, however, in conceptualizing a continuum that carries no normative valence that one level of integration is better than another and no expectation that a partnership will progress through orderly stages. As we later describe, our data included partnerships that moved from right to left and from left to right and both were viewed as successful by the relevant stakeholders.

Our first case, which we refer to as the "The Arm's Length Partnership Model" involved a national financial services business and a handful of longstanding nonprofit grantee partners. The business' relationships with the grantees began as primarily financial but grew in such a way that business employees volunteered their time to "consult" with nonprofits and made themselves available to serve on nonprofit boards. Our second case, termed "The Operational Partnership Model" involved a retail nonprofit (registered as a 501c3) which fulfilled its mission, and generated its revenue, by selling goods donated from local businesses. We refer to this as an operational partnership because the nonprofits mission was dependent on the regular weekly or monthly participation of local businesses, as well as significant funding from a corporate foundation. We refer to our third case as "The Incubator Model", as it was comprised of a national industrials business, which had established a nonprofit initiative within its own organization and ultimately span it out. The two organizations maintained a close working relationship, with the business still providing some financial and operational support and business members involved as volunteers and board members. Our fourth case, "The Adoption Model", involved a nonprofit initiative that became embedded within a for-profit international apparel company, which also acted as its landlord and main funding partner. To

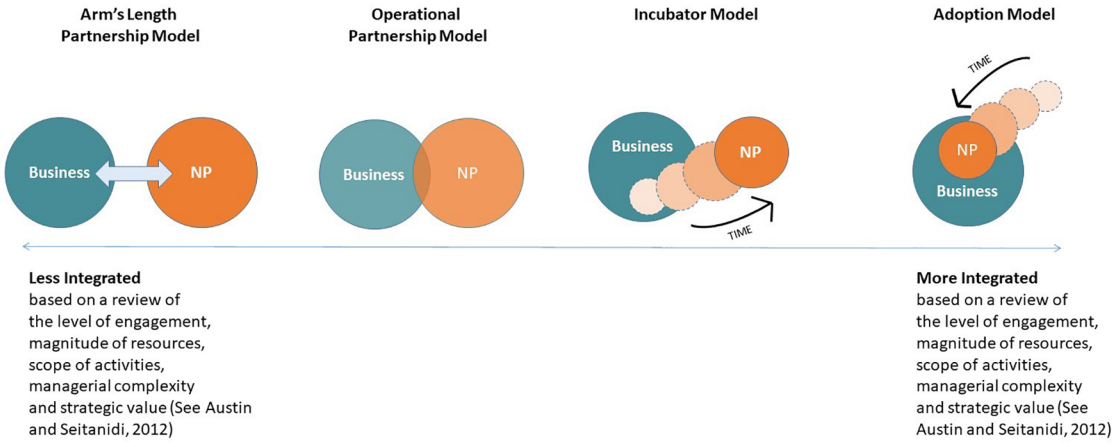


FIGURE 1
Continuum of business-nonprofit integration.

protect the identity of the partnerships we provide limited details on the organizations involved.

For clarity, we have labeled our cases based the nature of business and nonprofit integration. Doing so suggests a dyadic focal relationship. In reality, we observed the focal organizations as embedded in often complex networks of nonprofit, for profit and municipal organizations. Diagrams illustrating the complexity of these networks for each case are available in the Appendix.

A note on the public sector's involvement across the project is warranted. The public sector, primarily in the form of city government, played a role in shaping each of these partnerships. In Cases 3 and 4, that role was operational in the sense that a public institution served as a site of partnership activity or a gatekeeper to key constituencies (e.g., school-aged children), hence the public sectors' inclusion in the interview set. In the other two cases, the public sector was not an active participant. All business' involved in our fieldwork were cognizant of the public sector, and particularly people in government with regulatory power, as an important audience for their partnership work. That said, key informants understood themselves to be primarily in partnerships between nonprofit and for-profit organizations, which is why we chose to reflect that language and emphasis throughout.

Table 1 provides further detail on the data collection for each case. After obtaining agreement from each of the collaborating organizations involved in the four cases, we identified individual participants and opportunities for observation in consultation with the host organizations. The interview sample included representatives from the business and nonprofit organizations involved in each partnership, and from purposively selected organizations with more peripheral involvement. Those organizations with more peripheral involvement included other businesses or nonprofits involved in sponsoring or funding initiatives as well as public agencies. Interviews were conducted in-person or by Zoom at the key informants' convenience and lasted 30–60 min. Interview guides focused on eliciting key informants' perspectives on the nature of their involvement with the partnership, origin and evolution stories of the partnership, motivations for partnering, and challenges faced and benefits gained from the relationship. Focus groups, which we conducted to elicit the perspective of clients, service users and beneficiaries, focused less on operational tactics and more on their perceptions of the business and nonprofits in question and the effects of the partnership. Each focus group was facilitated by two members of the independent research team, which included experienced qualitative researchers, and a university community liaison director who was also a former youth worker. All participants consented to participate in the focus groups, and parental/guardian permission was sought where appropriate.

We analyzed the data within and across cases using principles of reflexive thematic analysis (33–35), which allowed us to identify and refine common and deviating themes through an iterative process of constant comparison. This approach emphasizes the importance of researcher's subjectivity as an analytic resource, rather than assuming that researchers' subjectivity is an obstacle to be avoided. We followed the process described by Braun and Clarke, including (1) data familiarization, (2) systematic data coding, (3) generating initial themes from coded data, (4) developing and reviewing themes, (5) refining, defining and naming themes and (6) writing a report (34). We coded for both semantic (overt) and latent (implicit) evidence in our data, with an eye towards key challenges faced by the strategic partnerships and effective strategies to overcome them. Throughout this process, our team used their judgement to elevate certain patterns and ideas, while relegating others. The role for researcher judgment allowed previously published frameworks and theories with which the research team was familiar to influence the analytic process. As a result, we consider our approach to be abductive, rather than purely inductive or deductive. In presenting the data herein, we use illustrative quotes which have been anonymized to preserve confidentiality.

We chose a case study research design in order to explore the in-depth dynamics of longstanding business-nonprofit partnerships. The tradeoff we made in selecting this research method is that some aspects our findings are not necessarily generalizable to cross-sector collaborations in other times, places and types of partnerships. For instance, drawing our cases from a single metropolitan area (Boston) may have influenced the behavior of businesses or non-profits in ways we could not detect without a comparator.

Results

We first illustrate the reasons strategic partnerships between businesses and nonprofits can be difficult to develop and manage effectively. We then suggest several ways for managers to build capacity for responding to these challenges. Our case studies suggested that building sustainable business-nonprofit partnerships required each organization to cultivate the capacity to be responsive to their partner and their environments. Cultivating the capacity for responsiveness enabled partnerships to enact the learning over time, as previous studies have suggested is prudent (2, 16). Most critically, an approach that assumed uncertainty and adopted a strategy premised on responsiveness facilitated the capture of value from partner organizations' differences. While operating so flexibly may sound like a fly-by-the-seat-of-your-pants strategy, it is not: it requires considerable investment of resources and tactical decision-making, as we describe below.

Part 1: Challenges to sustaining partnerships between nonprofits and business

Partnerships between business and nonprofit organizations entailed collaboration across divergent norms, practices, and ways of engaging with other organizations, which reflected the different sectors and relational contexts in which these organizations operate. The need to bridge diverse logics was central to understanding the distinctive challenges of building resilient, cross-sector partnerships (2, 10). We identified four central challenges faced by organizations engaging in cross-sector

partnerships, which reflect the inherent unpredictability and gaps in mutual understanding that characterize efforts to build lasting, strategic partnerships. Identifying the nature of these challenges is essential to understanding what is required to be successful in partnerships (Table 2).

(1) How to manage shared work while respecting differences in structure, culture, and values across organizations

It is common to assume that nonprofits and businesses form strategic partnerships out of a sense of shared goals and purpose. To do so emphasizes the similarities or likenesses between the organizations as the basis for collaboration (15, 36). While partnerships entailed collaborating to achieve a joint operational goal (e.g., delivering a fitness program in schools, providing access to affordable fresh produce), our case studies suggested that successful management of these relationships relied on both partners also leveraging the underlying differences between them. These differences created the value proposition for partnering.

Together, successful partners strove to achieve goals that would have been impossible or at least difficult to achieve without one another. Nonprofits were keen to work with businesses on account of their assets, which included funding, relationships with local elites and access to in-kind resources (e.g., volunteers, operational support) and forms of expertise that nonprofits lacked (such as marketing or digital expertise) (40, 41). Businesses were attracted to working with nonprofits based on their strong relationships and legitimacy with local communities, and the relational expertise and technical expertise needed to deliver programs and maintain stakeholder engagement. One business manager described the know-how they gained through partnering as follows:

> *"We also have [a relationship with Nonprofit] who helps provide the youth development perspective that we frankly, at [Business], we don't have. I mean we're a financial services company. We don't know."* (Business Manager)

That strategic partnerships are premised on difference created a managerial challenge: specifically, how to successfully navigate those differences. The business sector is generally characterized by a market logic that emphasizes competition and financial returns, while the nonprofit sector may be defined by a logic that emphasizes community responsiveness, health equity, and long-term time horizons. The varied levels of integration amongst the cases allowed for varying degree of separation between the organizations and their respective worldviews or institutional logics (8, 10, 42). As the literature anticipated, less integrated relationships were less complex to manage but all partnerships faced some degree of logic conflict (40, 41, 43).

Managers on both the business and nonprofit sides of partnerships frequently drew stark comparisons between their organizations and ways of working. A nonprofit sector manager's made this emblematic comment:

> *One of the things is they are a big corporation and we are a smaller grassroots program. We're so far apart sometimes […] I think people just don't understand how things operate between two worlds all the time.* (Nonprofit Manager)

These logics inform the principles, expectations, and norms that in turn shaped the behaviors, priorities, and understandings of people working in different sectors.

The divergent logics sometimes manifested as tension within the partnership. In one case, tension bubbled up over the importance of branding consistency and justifiable uses of money within the partnership. A senior manager of a youth serving nonprofit described the challenges that a logo change presented to their organization, contrasting the experience with what they understood of a business' experience of the same kind of change:

> *For a youth serving nonprofit, consistency is so key to having a brand recognized by young people … So [when you get a new logo] it's like, Now you have to change the uniforms, you have to change your t-shirts, your materials. For a private sector, it's like, "Oh, yeah, we can do the design and then we can just order them." … In the nonprofit sector, those are dollars to undo, that we could actually be dedicating to direct service.* (Nonprofit Senior Manager)

This culture clash had relational consequences, as misunderstandings and misinterpretation of partner behavior undermined trust. For many businesses entering into collaborations with nonprofit partners, a trust deficit may be present from the very start and therefore exacerbate misunderstandings due to cultural differences. One interviewee

TABLE 2 Managerial challenges presented by business-nonprofit strategic partnerships.

Common assumption	Observed reality	Resulting managerial challenge
Partnerships are premised on shared goals and purpose across organizations (6, 15, 36)	Partnerships created value based on integrating differences between partnering organizations	Managing shared work while respecting structural, cultural, and values differences across organizations
Roles and expectations should be specified at the outset (6, 16, 37)	Lack of clarity at the outset was unavoidable because both parties lack critical information about the other	Establishing and conduct joint work without clarity on roles or expectations
Partnerships are dyadic, meaning between two entities (e.g., one business and one nonprofit) agreeing to work with one another (25, 38)	Both businesses and nonprofits were embedded in broader networks of organizations that exert influence on the partnership	Managing relationships with organizations embedded in public, for profit, and nonprofit networks
Progression of successful partnerships is to naturally deepen and become more integrated over time (32, 38, 39)	Deepening and becoming more integrated over time was not the only productive path forward	Managing a partnership with an open-ended trajectory

reflected on how nonprofit sector colleagues negatively perceived business:

> *I have definitely become much more of a believer of that business community can or should be more a part of addressing issues. I don't know if anyone ever said this to me explicitly, but being in education and community for so long, business was [seen as] just … bad. You didn't even try to engage businesses in the community. Most people's orientation is that "I don't want anything to do with business".* (Nonprofit Employee)

(2) How to conduct work without clarity on roles or expectations

Good managerial practice often requires specifying roles and end goals at the outset of a project. A hallmark saying of strategists is "start with the end in mind (44)." The implication is that planning can proceed backwards from a clear picture of a desired outcome. Business managers often approach their relationships to nonprofits in this way. This thinking has migrated into previous writing about strategic, cross-sector collaborations. Don Barr, for instance, defined partnership as a commitment to a common goal, including joint provision of resources and sharing of risks, "that was directed from the outset." He and others presumed that clarity will mitigate the potential for conflict (15).

What we observed in our cases, however, was that both the final products as well as various players' roles were often impossible to gauge accurately at the start. The relationship between organizations often took root prior to a precise understanding of what the work might entail, often because people in positions of authority had met and developed a relationship or engaged in low-intensity forms of collaboration before committing to a more substantial organizational partnership. As a result, the process of identifying areas of alignment and partners' strengths and capacities unfolded gradually after kickoff events and public announcements.

> *At the beginning it was, it was still partnership [but] it became more substantial because we really [came to share] the development of the program. And this is something that [Business] does with a number of other organizations [..] So, their attitude is a bit different than just having a kind of, "Well, here is the partnership. Here is how it's going to work. You're going to do X. We're going to do Y and that's the end of it."* (Nonprofit Employee)

Because these long-term relationships were constantly evolving, managers were challenged to clarify roles and end goals sufficiently to enable work, but not so dramatically as to stymie change. In one case, nonprofit leadership shared with the research team that they had initially agreed that the nonprofit was the business's signature CSR commitment but were now trying to determine what their organization's role would be in terms of encouraging the business' non-CSR employees to consider the social impacts of their products. This was a delicate matter for the nonprofit, which was eager to push the business towards more pro-social action but conscious to avoid doing so in a way that would inadvertently sour the business leadership's commitment to the cause.

Although some unpredictability is inherent in all partnerships, even in those between businesses, the nonprofit context offered special challenges. Nonprofits strived to be community-responsive, meaning that their programmatic foci and potentially even their missions, are subject to change.

> *My sole focus is about what else can we give to our young people to make them successful. And we're going to do whatever we have to make sure that that is happening… What that looks like [in practice], it's going to take different shape and form. Their needs are changing on a regular basis.* (Nonprofit Leader)

The challenge for business managers was to conduct work without precise role and timeline definitions.

(3) How to manage relationships with organizations embedded in public, for profit and nonprofit networks

Particularly in the practitioner literature, partnerships are assumed to exist between two entities. A Google search for the term "partnership" conjures hundreds of pictures of two people holding hands, shaking hands, and connecting puzzle pieces. All convey an image of partnerships are dyadic. Business managers who sign Memorandums of Understanding (MOU) or Business Affiliate Agreements (BAA) with nonprofits often make this same image in mind.

The assumption that a business-nonprofit relationship is dyadic can set businesses, in particular, up for frustration. Businesses in our study that signed an MOU or BAA with a single nonprofit ultimately found themselves in relationships with considerably more groups by virtue of the nonprofit organizations' embeddedness in broader networks. One nonprofit manager descried the web of accountability and therefore network ties their organization faced:

> *I think we're certainly accountable to our service-users, their families, and the [municipal government department] as well as our funders…. From my perspective, if you're engaging with your community and you're putting a potential solution out there and you're taking funds in support of that solution or that mission, you're accountable to quite a cross-section of people.* (Nonprofit Senior Leader)

Similarly, one nonprofit with three sites explained how it had multiple funding partners:

> *Well, [our work is] funded differently in each of its three sites, but in [Location 1] it's funded by a combination mostly of city money, a little bit of state money. [Location 2] is funded through some state money, a tiny bit of city money, and mostly private money, and [Location 3] is sort of similar to [Location 2] in that it doesn't have a whole lot of governmental money and it's mostly private money. We also*

> *do have relationships with [Business], maybe some other corporations, and we make some money through our consultancy.* (Nonprofit Senior Manager)

These ties, which might include other major funders or key implementing partners, stood to unexpectedly influence nonprofit partners in ways that impinged on their relationship with the business partner. A business in our study, for instance, was engaged with a nonprofit that was also working with the local public school system. In the eyes of the nonprofit, it was the public sector partner that was most essential to the nonprofits' existence:

> *I think the most key relationships for us in order to continue to exist are the school districts. I mean, the districts themselves, the headmasters of each of the individual schools that we're at, the coaches, the teachers at those schools, those are the people that are our stakeholders and that we have to continue to engage and demonstrate our value to.* (Nonprofit Manager)

This relationship to the public school system exposed the nonprofit to a series of political and bureaucratic decisions made by people outside of its organization. At the outset, the business partner did not understand the extent of the *other* partner's influence on the nonprofit partner's priorities, needs, and practices. Further, as the nonprofit scaled up and expanded into new locations, still additional influences were added over the course of the partnership. New partners introduced additional uncertainty and potential for misunderstandings for the original business partner, as the introduction of additional collaborators risked compromising the autonomy of the nonprofit.

In one case, the embedded nature of the nonprofit work actually constrained how the business-nonprofit partnership was able to scale up. Both parties were interested in seeing the nonprofit's work reaching additional people in new communities. In furtherance of this goal and its own standing as a prominent CSR player, the business would tout the benefits of the nonprofit's programming to local governments when it moved into a new community. In the minds of the business' leadership, doing so was at least partly a favor to the nonprofit insomuch as it advanced the nonprofit's reputation. However, the nonprofit was reliant on the participation of other stakeholders, beyond the business' purview, in order to successfully establish their program in new communities. As a result, the nonprofit and business agreed that scaling their two operations into new geographies in tandem would be difficult. Instead, the nonprofit would have to trail the business' expansion and consider each community on a case-by-case basis. Coming to terms with this approach required lengthy and careful discussion between partners, including the development of clearer criteria for scaling up to avoid damage to the nonprofit's relationships with the business as well as other key stakeholders in its network.

The uncertainty that stemmed from this sort of embeddedness within wider relational networks is inherent to collaborations with nonprofits. The uncertainty may be particularly challenging for a business when the business itself has no direct relationships with, or limited understanding of, the expectations, practices, and priorities of those other influential players.

(4) How to manage a partnership with an open-ended trajectory

A substantial thread of the partnership literature assumes that partnerships will naturally deepen and become progressively more integrated (15, 38). Moreover, the implicit assumption is that increasing closeness or integration is desirable—a reflection of a successful partnership, while greater separation over time indicates regression or failure (16, 45).

We found, however, that moving toward deeper integration is not the only "successful" trajectory for relationships between business and nonprofit partners. Instead, our study found evidence that a strategic partnership may grow *less* integrated over time but nevertheless be considered successful by partners.

The "Incubation Model" case provides an example. The nonprofit began as the CSR initiative of the industrials' business, but now operates as an independent 501c3 focused on physical fitness. After several years operating as an "in-house" initiative that staff volunteered time and money to, the initiative grew in scope and became increasingly organizationally independent from the business. It was eventually spun out as a standalone entity to allow the nonprofit to attract additional resources from philanthropic funders. Today, the two organizations are still closely engaged with one another. The business also continues to be one of the nonprofit's major funders, remains involved in its strategic development, and plays an important role on its board of directors. Both the business and the nonprofit viewed this development as a success. New research indicated that this kind of "spinout" is becoming an increasingly common pathway for ending business-nonprofit relationships and a potentially attractive alternative to exit *via* "dissolution (46)."

Even so, out data indicated that the spinout evolution created challenges for managing the relationship, as the business had to figure out how to "let go" of the nonprofit that had been born within its four walls. Business managers remarked:

> *I think it's having that balance of still having a connection and still being visible, but from a structural and resource standpoint [allowing the nonprofit to] stand more on its own.* (Business Senior Leader)

> *We're trying to let this [new] board come in, get involved. I think we would love to play a continuing role, but at a smaller level so that it can actually grow and achieve what it can achieve.* (Business Senior Leader)

Successful collaborative trajectories can take many paths and business cannot know at the beginning which path will be most advantageous or which values or aspects of shared vision may shift over time (21, 29, 47). The potential for successful partnerships to travel in more than one direction added to uncertainty, as practitioners lack a reference trajectory for how success should be defined in advance.

Part 2: Building capacity for responsiveness

Although managers cannot eliminate the differences, uncertainties, or unpredictability described above, we identified four ways in which organizations in our caes studies reformed (or failed to reform) themselves internally so as to position themselves for success. Each reform involved building an organization's capacity to respond to partners and their environments—this is resilience. Note that the goal was to create an organizational environment where managers could be responsive to a partner whose differences were *respected*—rather than controlling partnera whose differences were *resented*. We therefore refer to the package of four approaches as the "capacity to be responsive (**Table 3**)."

In our usage, to be responsive means to identify and accommodate differences and uncertainties intrinsic to strategic partnerships. Our general finding that the management of uncertainty requires organizations to commit substantial resources to "governance" accords with previous transaction-costs literature on public-private partnerships by Rangan, Samii and van Wasserhove (48). We describe the specific steps in more detail below to convey how partners can build internal resilience to nurture sustainable relationships.

(1) Develop a set of minimum viable conditions for the partnership—otherwise, be willing tolerate ambiguity and uncertainty

In contrast to many managers' instincts, our findings demonstrate that collaborations can profitably begin with considerable ambiguity and evolve over time. Roles and contributions in longer-term partnerships need space to grow and change in order for the partnership to remain relevant for partners and effective in problem solving. While many managers recognize the conceptual need for such openness, arranging workflows and business processes to support it can feel slow, if not circular. In our study, partners that were able to maintain a productively open stance were those that had developed and could communicate a set of "minimum viable" conditions for the relationship (16, 49). Minimum viable conditions refer to the "must haves" that each party requires for the partnership to be acceptable. Identifying these early allows both partners to avoid wasting time and resources in a relationship that will ultimately derail.

> *I think that unfortunately, sometimes, as a nonprofit, you are faced in that position, where like you really need this grant. But then there's one kind of piece that [the business] wants to see added to a project plan. Then, all of a sudden, you have this like mission creep, [..] And I think, you know, to [Business'] credit, I think that they're very clear about what their approach to CSR is.* (Nonprofit Manager)

The primary condition that needed to be recognized was the purpose for engagement—namely, what brings each partner to the table? Importantly, the purpose for business' participation in the partnership needed not be same purpose that nonprofits are pursuing. The respective rationales needed simply be identified and accepted by both parties. Though it could be tempting for business to withhold key information, such as an interest in reputation gains, from the conversation about purposes, we found that the clearest possible articulation of each party's rationales was critical to facilitating mutual understanding and anticipatory decision-making.

Other potential minimum viable conditions for the partnership flowed from the articulation of purpose. For instance, we observed a meeting in which a business partner set out its minimum requirements for engagement with its key nonprofit partners. Leadership from each of the nonprofits in the room were asked to sign a "partnership agreement" which included requirements for nonprofit partners to complete regular surveys and evaluations for longitudinal research being done on the nonprofit initiative. The business also established that consistent use of their logo in public facing materials was critical to sustaining support for the partnership within the business.

Apart from the articulation of minimum conditions, we found that successful partners in our study took a particularly developmental approach to managing their relationship, allowing the relationships to develop over time rather the specifying the form and extent of collaboration at the outset. In one case, the partnership proceeded gradually in expanding the scope of collaboration, roles and contributions over time, allowing mutual understanding to inform these changes. One senior business manager described their approach as follows:

> *It's kind of figuring out what [nonprofit] need and where we can plug in because the last thing we wanna do is [..] try to jam something down their throat. That doesn't help them. So I think that's what we are really good at, is trying to get a sense of what the nonprofits need and then above the grant, trying to fill in what those gaps are with employees and resources.* (Business Senior Manager)

TABLE 3 Managerial challenges and suggested actions

Managerial challenges borne of uncertainty	Suggested actions to build a capacity for responsiveness
• How to manage shared work while respecting structural, cultural, and values differences across organizations	• Develop a set of minimum viable conditions for the partnership—otherwise, be willing to tolerate ambiguity and uncertainty
• How to conduct work without clarity on roles or expectations	• Create structures for mutual dialogue up and down, within and between organizations
• How to manage relationships with organizations embedded in public, for profit, and nonprofit networks	• Recruit and develop people with experience in both business and nonprofit domains to navigate and leverage organizations' different strengths
• How to manage a partnership with an open-ended trajectory	• Mobilize non-financial commitments in support of the partnership

In its relationship with one nonprofit, the business' support began with event sponsorship but morphed over time to be considerably more involved as a result of conversations with the nonprofit. Ultimately the nature of the partnership took a form that could not have been predicted. It also involved recognizing when collaborative projects were *not* working, and shifting gears appropriately. At one point the partners decided to end one aspect of their joint work when it proved a poor fit with service users' needs and constraints. This "ending" did not spell an end to the partnership but rather an impetus to find alternative ways to collaborate.

In pursuing pro-social work, it was inevitable that contexts and needs change and the nature of these changes cannot be known at the start. In one case, initially the partnership was squarely focused on acquiring equipment and space for youth fitness activities. Over time, in response to changing needs within the community being served, the partnership successfully shifted its focus to supporting the well-being of young people participating in the initiative:

> *When we started there was a heavy investment getting the facilities and the uniforms and equipment to a standard which people thought was appropriate, and we don't do that anymore. [Nonprofit] doesn't do that anymore, because it has built up the infrastructure and now it's focusing on [other aspects of kids' health]. So, I think it's a lot deeper of a mission and intended outcome than when it started.* (Public Sector Partner)

This was facilitated by the willingness of the business partner to ask nonprofit partners and community members about their perception of where the need was greatest.

In both cases, strategic shifts were only possible because the managerial team's willingness to confront some degree of ambiguity about the future of the relationship with the nonprofit —including the possibility that it may end. In this way, resilient partnerships were those open change and communication between organizations.

(2) Develop two-way dialogue structures up and down, within and between organizations

Organizations in our study that developed multi-level, two-way dialogue within and between partners appeared more resilient amid the inherent uncertainties associated with strategic partnerships. Two-way dialogue refers to communication patterns that allow both parties to share and listen.

Communication *between* the business and nonprofit was understandably vital. One nonprofit leader summarized the importance as follows: "*There have to be, I think—very clear goals, clear communication, clear contact people. [As a partner, I want to know]– what is the structure of the flow of communication?*" (Nonprofit Manager) Nonprofit managers in particular described the importance of feeling that business partners sought and valued their input. Such dialogue *between* partner organizations was most effective when it occurred not only at one level (e.g., between frontline staff) but at multiple organizational levels. This intentional redundancy in communication limited the potential for misunderstandings and misinterpretations, which are otherwise common (50), and laid the foundation for the development of mutual understanding and responsiveness.

> *It's really not a sponsor relationship, it's really not like we give you a bunch of money, and then you put our logo everywhere. Any time that the [Nonprofit] is doing something new, or we have a new set of goals to align with, we really come together and talk about that, about how we can both benefit from a partnership perspective.* (Business Manager)

A school principal, for instance, articulated the school staff's appreciation for the business partner's transparency and communication:

> *They are extremely transparent, which allows us to make informed decisions about either continuing the relationship or redefining the relationship or dissolving the relationship, and I think that is important. The players may change, and they have, but the goal does not change. And that's how we survive.* (Public Sector Partner)

The development of two-way dialogue was dependent on the communication patterns and preferences of business leaders but was also a structural feature of the relationship. In our study, managers made structural commitments to facilitate two-way dialogue with the nonprofit by co-locating employees, establishing standing, formal meetings, and identifying "point people" within both organizations. Nonprofit employees shared with us that they valued the ability to pick up the phone and call a point person rather than waiting to raise something in a formally scheduled meeting.

Less intuitive but equally vital was communication *within* the participating organizations about the partnership. Communication up and down the business' internal organizational hierarchy was especially important in order to facilitate information transfer from front-line managers who were engaged in partnership activities to senior leaders making key strategic decisions and holding purse strings. Horizontal communication between partners was described as equally important:

> *My point is in the organization there is the employee wellness, there is like the long term care wellness, there is life insurance wellness, there is the real estate aspect, corporate responsibility [all of whom are involved in this project]. So we just like once a month get together and kind of talk about what each group is doing.* (Business Manager)

Creating such communication flows stands in contrast to the more common business practice of isolating communication with and about nonprofits within CSR departments, but is consistent with previous literature highlighting the importance of mundane, relationship management work (3). Just as Nithin Nohria and his colleagues found in business to business partnerships, we found that managerial processes matter a great deal in determining the

viability of business-nonprofit partnerships (51). We found that considerable frustration between partners could be avoided when communication channels within each of the partnering organizations was effective. One of our case study businesses was especially conscientious about the need to keep people within the company informed about opportunities to work directly with partner nonprofits. We spoke with an employee who was volunteering at a partner nonprofit's event about how they found out about that opportunity. They described the within-firm communication about the nonprofit partnerships as follows:

> *I would say that there are three regular forms of communication that [the CSR team] pushes out. There is kind of like an internal social network, which is like a Facebook for employees. They make announcements there. There is also a monthly newsletter, where they highlight what the volunteer opportunities are. And then the third thing is that there are internal articles on our intranet. Then for me, because they know I volunteer a lot, folks from CSR will reach out to me directly and say "Hey, I'm not sure if you're aware but this is coming up." So it gets out a variety of ways.* (Business Employee)

Communication touch points up, down, between and *within* business and nonprofit organizations created space to address significant struggles stemming from the clash of cultures that can occur when bringing different sectors together. They also facilitated early the greatest possible clarity between partners about each other's intentions, roles and expectations—even as some of these things may change. Two-way dialogue enabled business leaders, in particular, more visibility into how the network of actors in which the nonprofit is embedded may influence nonprofit decision-making. Finally, regular dialogue allowed partners consistent opportunities to reassess priorities and goals in order to respond with resilience in the inevitable event of change.

(3) Recruit and develop leadership that has experience in both business and nonprofit sectors

Our research indicated that the experiences of people in leadership positions played a key role in making business-nonprofit partnerships work. When partnerships were staffed with people who had experience in both the business and nonprofit sectors, these individuals were able to provide insight for their own organizations about life in their partner's organization. These lived experiences often went beyond basic vocabulary and insights about budgetary or financial constraints. The lived experiences allowed these individuals to work as brokers between the two worlds. In previous work, Aveling and colleagues have referred to "knowledge brokers (52)" as key to partnerships, and Sujin Jang has used the term "cultural brokers" to refer to similarly-situated intermediaries (53, 54). Jang studied more than 2,000 global teams and found that diverse teams with a cultural broker significantly outperformed diverse teams without one. Hence, if we think about inter-organizational partnerships as creating a certain kind of team, the value of cultural brokers is unsurprising. In our cases, their involvement shortened the distance between organizational cultures and increased mutual understanding and responsiveness.

The presence and agency of cultural brokers in both business and nonprofit partner organizations helped sustain strategic partnerships. Our case studies indicated two ways to cultivate cultural brokers within an organization. The first was to hire individuals to work on the partnership who were *themselves* well-networked across sectors because they had experience working in both business and nonprofit settings. The second was to develop closely-knit leadership *teams* composed of people with experience in both sectors. The need for leadership with experience in both domains was not confined to the C-suite but also extends to distributed leadership networks that include individuals who operate at other levels within the company and across diverse organizational units.

No matter the method, businesses that chose to cultivate nonprofit experience within their ranks had useful internal references for their partners' experiences—as did nonprofit organizations that employed people with business backgrounds. Managers with experience of "other sector" had the ability to speak persuasively to partner concerns and interests, thereby increasing their employers' ability to respond adroitly. One business leader described the value of cross-trained people in helping the business access the best possible information: "*The relationships [with people from other sectors] provide you with information and it's the access and compilation of all of that information that makes you most effective.*"

To optimize leaders' skills and experiences, organizations in our study developed structures and contexts for cultivating their translation capacities. Effective cultural brokers enabled others to tap into their networks, not just by delegating tasks, but supporting others to develop their own relationships within the relevant networks. Cultural brokers relied not just on individual traits (such as charisma and communication skills), but from experiences living, working, and being embedded in diverse networks and sectors. For example, a business senior leader in the Incubation case identified up-and-coming leaders and then encouraged them to attend community events or events with local politicians so that they could begin to build their own networks.

> *In my opinion to be truly successful you can't leave out any one of those circles [circles being business, community and philanthropy, and politics], and I think probably the higher up you go inside the organization the more you develop all three deeply, but I would say we still encourage younger people to be familiar and to understand what is going on.*(Business senior leader)

(4) Mobilize non-financial commitments in support of the partnership

In light of the resource disparity that commonly exists between businesses and nonprofit partners, it can be natural for businesses

starting strategic partnerships to anticipate the need to make financial investments in their new partners. What we found is that businesses looking to sustain those partnerships will likely also need to invest time, energy and resources in their own intra-organizational capacity. "Cutting checks" was, in some sense, the most straightforward way for a business to support a nonprofit. Doing "more than cutting checks" demanded additional effort on the business' behalf. This included dedicating staff hours, developing information management systems, cultivating the infrastructure to enable employee volunteering, and in some cases, paying for employee time spent at the nonprofit.

In particular, initiatives we observed demanded considerable intra-firm coordination and commitment from across departments. One business took the initiative to create "flash consulting" days, deploying groups of employees to help the nonprofits work through organizational problems identified by the nonprofits. The consulting groups represented diverse segments of business and each group was paired with one nonprofit. They meet for several hours at the end of the dedicated day, made recommendations for the nonprofits' consideration. Another deployed IT staff to help a nonprofit partner develop a new data base. Both activities required considerable planning, oversight and sign-off from various levels of management within the business.

Both public sector and nonprofit partners in our study indicated that the commitment of non-financial resources was an indicator of genuine commitment on the part of business. Nonprofits in our study noted the value of partnering with firms that had well-developed and integrated approaches to CSR (40, 41).

> *Int: Think about a strong corporate partner, what do you think contributes to really being able to have a good relationship with them and the ideal level of engagement?*

> *Nonprofit Manager: I think [what it is], fundamentally, is having a corporate social responsibility program be kind of embedded in the DNA of the company. It's not checking a box. [..] The organizations or corporations with the most mature CSR program are [the ones] where they've got individuals who are dedicated to this. It's not somebody who just wants to do something good so joins a committee in addition to all of their other job responsibilities.*

On the contrary, we found that nonprofit skepticism about the sincerity of business involvement was often attributable to internal capacity constraints at the business. This is consistent with previous literature that has found that focused engagement allows business' to demonstrate sincerity in their social commitments to customers or regulators (55, 56).

All of the strategies we have described here require dedicated resources. Developing internal capacity for responsive strategic partnering allows organizations to flexibly mobilize internal resources as projects and needs evolve. It also avoids the partnership being siloed in the business' CSR department or a single nonprofit programmatic area, which can limit the relationship's impact. While cross-sector collaboration is often a difficult and uncertain process, dedicating time and resources is central to building the capacity for responsiveness that collaborators value and that leads to more resilient strategic partnerships.

Discussion

Studying long-term partnerships between businesses and nonprofits shed new light on what makes them resilient over time. Our four cases encompassed some non-intuitive challenges and novel approaches to managing these cross-sector relationships for the purposes of achieving population health improvements. In contrast to inherited wisdom about business-nonprofit relationships, the insights we gained from our research emphasized the need for business managers to develop a capacity to be responsive to their partners' inherent differences. The four practices that surfaced—tolerating ambiguity and uncertainty, developing robust communication structures, cultivating leaders who could act as cultural brokers and committing non-financial resources towards the work—comprise a new perspective on business-nonprofit partnerships that is routed in organizational learning. Cross-sector partnerships that *learn*, in short, are more resilient in the face of uncertainty than partnerships that *plan*. The latter are destined to encounter surprises, usually unwelcome ones, as a result of their differences in operating modes, which can derail a relationship by violating the expectations captured by the plan. But partnerships that learn expect surprises, learn from them, and continually develop their capacity to work together.

Our findings thus differ from conventional wisdom on what makes partnerships work. We did *not* find evidence in any of our cases of multi-year partnerships of a business and nonprofit trying to match the two organizations' purposes, incentives, or metrics in an effort to align around their shared goal. Celebrating efforts to "align" the organizations (57–59) may seem a logical way to facilitate partnership, but our study suggests that building strategic partnerships on the basis of sameness may be imprudent. It is the *differences* between businesses and nonprofits that make a partnership attractive in the first place. Striving to erase those differences, for the purposes of making the relationship easier to manage, could undermine the value of partnering. This argument mirrors aspects of the strategic alliance literature, which suggest that alliances are most successful when based on synergies rather than similarities (11, 60). In order to leverage the differences between partners, we have suggested that what businesses can do is build internal capacity in order to be responsive to nonprofits.

In highlighting the value of difference, our analysis also drew attention a paradox related to trust in business and nonprofit relationships: when partners are starkly different from one another, they need to rely on trust more heavily to facilitate collaboration but they will find trust more difficult to develop. In other words, trust is critical in these relationships because the partners are unfamiliar with one another, and yet this unfamiliarity makes embarking on a deep, strategic partnership especially risky. Actions required by the partnership—such as sharing sensitive information or making substantial financial

investment in an untested idea—leave each partner vulnerable to the other's potential exploitation. The trust inherent in these actions could be violated if a partner chose to distribute that information widely or suddenly back out of the project. Particularly for a business and nonprofit who are unfamiliar with one another—and the wider, influential networks within which each is embedded—it can be unsettling to confront the plausibility of these outcomes.

To make matters more difficult, our data echo previous findings that business and nonprofit partners often come to a potential partnership without a reservoir of trust to draw upon (39, 61). Rather than a neutral stance, partners are likely to have experienced or observed fraught relationships between businesses and nonprofits that create a trust deficit on both sides (62). Past, negative experiences—or even perceptions—could encourage a trust deficit by making partners wary of revealing vulnerabilities, for fear that their partner would exploit them (63). Overcoming such a deficit requires the mistrustful partner to risk exploitation in order to discover a partner can be trusted. But of course, it is natural for management teams to wonder: why should we risk exploitation if we believe our partners to be untrustworthy? This cross-sectoral history highlights the need to develop partnerships incrementally over long time horizons.

We recognize that our suggestions ask managers to withstand, if not embrace, a considerable amount of uncertainty. Although travelling this path of uncertainty and shared learning is challenging for those accustomed to a traditional project management paradigm, it offers an opportunity for mutual learning and the possibility of value creation. It creates particular discomfort in a business domain (CSR) that many still see as supererogatory, which makes it easy for some managers to simply abandon the effort. Yet, uncertainty is increasingly unavoidable—not just in novel partnerships but also in each organization's standard operating environment. Thus, more than just their cross-sector partnerships stand to gain from business and nonprofit mastery of these resilience building strategies.

Data availability statement

The dataset generated and analyzed during the current study are not publicly available because they contain information that could compromise research participant privacy. Anonymized data that support the findings of this study are available on reasonable request from the authors.

Ethics statement

The studies involving human participants were reviewed and approved by Harvard Chan School Institutional Review Board. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

LT, E-LA, NB, AE, and SS were all involved with the conceptualization of the project, data collection and analysis. JR joined the project at the data collection stage. LT led the development of the manuscript but all authors reviewed several drafts and signed off on this submission. All authors contributed to the article and approved the submitted version.

Funding

This research was supported by a grant from Robert Wood Johnson Foundation (RWJF) grant numbers (4275 and 7767).

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

1. Koh HK, Bantham A, Geller AC, Rukavina MA, Emmons KM, Yatsko P, et al. Anchor institutions: best practices to address social needs and social determinants of health. *Am J Public Health*. (2020) 110(3):309–16. doi: 10.2105/AJPH.2019.305472

2. Bryson JM, Crosby BC, Stone MM. The design and implementation of cross-sector collaborations: propositions from the literature. *Public Adm Rev*. (2006) 66:44–55. JSTOR. doi: 10.1111/j.1540-6210.2006.00665.x

3. Corbin JH, Jones J, Barry MM. What makes intersectoral partnerships for health promotion work? A review of the international literature. *Health Promot Int*. (2018) 33 (1):4–26. doi: 10.1093/heapro/daw061

4. Holt DH, Aveling E-L. Achieving partnership synergy: resource inputs, shared mission and interdependencies in Danish health promotion partnerships. *Health Promot Int*. (2023) 38(1):daac203. doi: 10.1093/heapro/daac203

5. Jamali D, Keshishian T. Uneasy alliances: lessons learned from partnerships between businesses and NGOs in the context of CSR. *J Bus Ethics*. (2009) 84 (2):277–95. doi: 10.1007/s10551-008-9708-1

6. Seaton CL, Holm N, Bottorff JL, Jones-Bricker M, Errey S, Caperchione CM, et al. Factors that impact the success of interorganizational health promotion collaborations: a scoping review. *Am J Health Promot*. (2018) 32(4):1095–109. doi: 10.1177/0890117117710875

7. Smith KE, Bambra C, Joyce KE, Perkins N, Hunter DJ, Blenkinsopp EA. Partners in health? A systematic review of the impact of organizational partnerships on public health outcomes in England between 1997 and 2008. *J Public Health (Bangkok)*. (2009) 31(2):210–21. doi: 10.1093/pubmed/fdp002

8. Ashraf N, Ahmadsimab A, Pinkse J. From animosity to affinity: the interplay of competing logics and interdependence in cross-sector partnerships. *J Manage Stud*. (2017) 54(6):793–822. doi: 10.1111/joms.12273

9. Aveling E-L, Jovchelovitch S. Partnerships as knowledge encounters: a psychosocial theory of partnerships for health and community development. *J Health Psychol*. (2014) 19(1):34–45. doi: 10.1177/1359105313509733

10. Greenwood R, Díaz A, Li S, Lorente J. The multiplicity of institutional logics and the heterogeneity of organizational responses. *Organ Sci*. (2010) 21(2):521–39. doi: 10.1287/orsc.1090.0453

11. Lasker RD, Weiss ES, Miller R. Partnership synergy: a practical framework for studying and strengthening the collaborative advantage. *Milbank Q*. (2001a) 79 (2):179–205. doi: 10.1111/1468-0009.00203

12. Selsky JW, Parker B. Cross-sector partnerships to address social issues: challenges to theory and practice. *J Manage*. (2005) 31(6):849–73. doi: 10.1177/0149206305279601

13. Malatesta D, Smith CR. Lessons from resource dependence theory for contemporary public and nonprofit management. *Public Adm Rev*. (2014) 74 (1):14–25. doi: 10.1111/puar.12181

14. Suárez D, Hwang H. Resource constraints or cultural conformity? Nonprofit relationships with businesses. *Voluntas*. (2013) 24(3):581–605. doi: 10.1007/s11266-012-9267-z

15. Barr DA. Ethics in public health research: a research protocol to evaluate the effectiveness of public-private partnerships as a means to improve health and welfare systems worldwide. *Am J Public Health*. (2007) 97(1):19–25. doi: 10.2105/AJPH.2005.075614

16. Austin JE. Strategic collaboration between nonprofits and businesses. *Nonprofit Volunt Sect Q*. (2000) 29(1):69–97. doi: 10.1177/089976400773746346

17. Weber J. Uncertainty and strategic management. In: Rabin J, Miller GJ, editors. *Handbook of strategic management*. 2nd ed. Abingdon, Oxfordshire: Routledge (2000). p. 203–27

18. Bouchard M, Raufflet E. Domesticating the beast: a "resource profile" framework of power relations in nonprofit–business collaboration. *Nonprofit Volunt Sect Q*. (2019) 48(6):1186–209. doi: 10.1177/0899764019853378

19. Amelia C, Mark F. Collaborative strategic management: strategy formulation and implementation by multi—organizational cross—sector social partnerships. *J Bus Ethics*. (2010) 94:85–101. doi: 10.1007/s10551-011-0781-5

20. Højlund H. Det værdibaserede partnerskab: Et dansk samarbejdsprojekt om lokal sundhedsfremme [the value-based partnership: a Danish collaboration project in local health promotion]. *Nordisk Administrativt Tidsskrift*. (2014) 91(1):27–43. https://research.cbs.dk/en/publications/det-v%C3%A6rdibaserede-partnerskab-et-dansk-samarbejdsprojekt-om-lokal

21. Ernst D, Bamford J. Your Alliances Are Too Stable. *Harvard Business Review, June* 2005. (2005). Available at: https://hbr.org/2005/06/your-alliances-are-too-stable

22. Fussell S. *The AI that could help curb youth suicide*. The Atlantic (2019). https://www.theatlantic.com/technology/archive/2019/07/google-partners-lgbt-suicide-prevention-nonprofit/593821/

23. Austin J, Quinn J. *Timberland and Community Involvement*. (2004). Available at: https://hbsp.harvard.edu/product/304086-PDF-ENG

24. Berger IE, Cunningham PH, Drumwright ME. Social alliances: company/nonprofit collaboration. *Calif Manage Rev*. (2004) 47(1):58–90. doi: 10.2307/41166287

25. Feilhauer S, Hahn R. Firm-nonprofit collaboration: explaining the rationale behind firms' cross-sector partner choices. *Long Range Plann*. (2021) 54(1). doi: 10.1016/j.lrp.2019.101952

26. Hamann R. Mining companies' role in sustainable development: the "why" and "how" of corporate social responsibility from a business perspective. *Dev South Afr*. (2003) 20(2):237–54. doi: 10.1080/03768350302957

27. Ariño A, de la Torre J. Learning from failure: towards an evolutionary model of collaborative ventures. *Organ Sci*. (1998) 9(3):306–25. doi: 10.1287/orsc.9.3.306

28. Büchel B. Framework of joint venture development: theory-building through qualitative research. *J Manage Stud*. (2000) 37(5):637–61. doi: 10.1111/1467-6486.00197

29. Kogut B. Joint ventures: theoretical and empirical perspectives. *Strateg Manage J*. (1988) 9(4):319–32. doi: 10.1002/smj.4250090403

30. Kanter RM. *Becoming PALs: pooling, allying, and linking across companies*. The Academy of Management Executive (1987–1989). Vol. 3(3) (1989). 183 p.

31. Shipman M. How COVID-19 May Affect Nonprofits (And What They Can Do About it). *NC State News*. (2020). Available at: https://news.ncsu.edu/2020/05/how-covid-may-affect-nonprofits/

32. Austin J, Seitanidi M. Collaborative Value Creation: A Review of Partnering Between Nonprofits and Businesses: Part I. Value Creation Spectrum and Collaboration Stages. (2012). https://journals.sagepub.com/doi/abs/10.1177/0899764012450777

33. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. (2006) 3(2):77–101. doi: 10.1191/1478088706qp063oa

34. Braun V, Clarke V. Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Couns Psychother Res*. (2021a) 21(1):37–47. doi: 10.1002/capr.12360

35. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qual Res Psychol*. (2021b) 18(3):328–52. doi: 10.1080/14780887.2020.1769238

36. Chandra A, Miller CE, Acosta JD, Weilant S, Trujillo M, Plough A. Drivers of health as a shared value: mindset, expectations, sense of community, and civic engagement. *Health Aff*. (2016) 35(11):1959–63. doi: 10.1377/hlthaff.2016.0603

37. McKinnon R. A case for public-private partnerships in health: lessons from an honest broker. *Prev Chronic Dis*. (2009) 6(2):A72. PMID: 19289015; PMCID: PMC2687878

38. Frances B, Aloysius N, Irene H. When suits meet roots: the antecedents and consequences of community engagement strategy. *J Bus Ethics*. (2010) 95 (2):297–318. doi: 10.1007/s10551-009-0360-1

39. Johnston LM, Finegood DT. Cross-sector partnerships and public health: challenges and opportunities for addressing obesity and noncommunicable diseases through engagement with the private sector. *Annu Rev Public Health*. (2015) 36:255–71. doi: 10.1146/annurev-publhealth-031914-122802

40. Aveling EL, Roberts J, Taylor L, Edmondson A, Singer S. Collaborative Forms: Structural Choices for Business and Nonprofit Partnerships (Working Paper) (2023).

41. Aveling E-L, Roberts J, Taylor L, Edmondson A, Singer S. A 'whole company' approach for justice and equity. MIT Sloan Management Review. 2020). https://sloanreview.mit.edu/article/a-whole-company-approach-for-justice-and-equity/

42. Friedland R, Alford R. *The Institutional logics Perspective: A new approach to culture, Structure, and Process.* | *Cairn.info*. (n.d.). Retrieved September 16, 2020, from: https://www.cairn.info/revue-management-2012-5-page-583.htm#

43. Edmondson AC, Harvey J-F. *Extreme teaming: Lessons in Complex, cross-sector leadership*. Emerald Group Publishing (2017). https://www.hbs.edu/faculty/Pages/item.aspx?num=53289

44. Covey SR, Covey S. *The 7 habits of highly effective people*. New York, NY: Simon & Schuster (2020).

45. Roy Chowdhury I, Roy Chowdhury P. A theory of joint venture life-cycles. *Int J Ind Organ*. (2001) 19(3):319–43. doi: 10.1016/S0167-7187(99)00014-4

46. Rama Murthy S, Roll K, Colin-Jones A. Ending business-non-profit partnerships: the spinout of social enterprises. *Scand J Manage*. (2021) 37(1). doi: 10.1016/j.scaman.2020.101136

47. Ring PS, van de Ven AH. Developmental processes of cooperative interorganizational relationships. *Acad Manage Rev*. (1994) 19(1):90–118. JSTOR. doi: 10.2307/258836

48. Rangan S, Samii R, Van Wassenhove LN. Constructive partnerships: when alliances between private firms and public actors can enable creative strategies. *Acad Manage Rev*. (2006) 31(3):738–51. doi: 10.2307/20159239

49. Edmondson AC. Wicked-Problem Solvers. *Harvard Business Review, June* 2016. (2016). Available at: https://hbr.org/2016/06/wicked-problem-solvers

50. Bates S. Creating a Common Language for Cross-sector Collaboration (SSIR). *Stanford Social Innovation Review*. (2013). Available at: https://ssir.org/articles/entry/creating_a_common_language_for_cross_sector_collaboration

51. Nohria N, Gulati R, Khanna T. *Unilateral commitments and the importance of process in alliances*. Boston, MA: MIT Sloan Management Review (n.d.). Retrieved April 15, 1994, from: https://sloanreview.mit.edu/article/unilateral-commitments-and-the-importance-of-process-in-alliances/

52. Aveling E-L. Mediating between international knowledge and local knowledge: the critical role of local field officers in an HIV prevention intervention. *J Community Appl Soc Psychol*. (2011) 21(2):95–110. doi: 10.1002/casp.1064

53. Jang S. The Most Creative Teams Have a Specific Type of Cultural Diversity. *Harvard Business Review* (2018). Available at: https://hbr.org/2018/07/the-most-creative-teams-have-a-specific-type-of-cultural-diversity

54. Casciaro T, Edmondson AC, Jang S. Cross-Silo Leadership. *Harvard Business Review, May–June* 2019. (2019). Available at: https://hbr.org/2019/05/cross-silo-leadership

55. Claasen C, Roloff J. The link between responsibility and legitimacy: the case of De beers in Namibia. *J Bus Ethics*. (2012) 107(3):379–98. doi: 10.1007/s10551-011-1045-0

56. Servaes H, Tamayo A. The impact of corporate social responsibility on firm value: the role of customer awareness. *Manage Sci*. (2013) 59(5):1045. doi: 10.1287/mnsc.1120.1630

57. Bultema S, Morrow H, Wenzl S. Accountable communities of health, health and social service systems alignment, and population health: Eastern Washington state, 2017–2019. *Am J Public Health*. (2020) 110:S235–41. doi: 10.2105/AJPH.2020.305773

58. Landers GM, Minyard KJ, Lanford D, Heishman H. A theory of change for aligning health care, public health, and social services in the time of COVID-19. *Am J Public Health*. (2020) 110(S2):S178–80. doi: 10.2105/AJPH.2020.305821

59. Murphy M, Arenas D, Batista J. Value creation in cross-sector collaborations: the roles of experience and alignment. *J Bus Ethics*. (2015) 130(1):145–62. doi: 10.1007/s10551-014-2204-x

60. Andrews R, Entwistle T. Does cross-sectoral partnership deliver? An empirical exploration of public service effectiveness, efficiency, and equity. *J Public Adm Res Theory*. (2010) 20(3):679–701. doi: 10.1093/jopart/mup045

61. Macdonald S, Chrisp T. Acknowledging the purpose of partnership. *J Bus Ethics*. (2005) 59(4):307–17. doi: 10.1007/s10551-004-3235-5

62. Rashid F, Edmondson AC. Risky trust: how multi-entity teams build trust despite high risk. In: Kramer RM, Pittinsky TL, editors. *Restoring trust in organizations and leaders: Enduring challenges and emerging answers*. New York, NY: Oxford University Press (2012). http://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199756087.001.0001/acprof-9780199756087-chapter-007

63. Taylor LA, Berg DN. The challenge of mutual disclosure in global health partnerships. *Perspect Biol Med*. (2019) 62(4):657–74. doi: 10.1353/pbm.2019.0038

frontiers | Frontiers in Health Services

TYPE Original Research
PUBLISHED 23 May 2023
DOI 10.3389/frhs.2023.1164072

OPEN ACCESS

EDITED BY
Susan S. Garfield,
ey US, United States

REVIEWED BY
Heidi Steinecker,
Ernst and Young, United States
Frances Garfield,
Mass General Brigham, United States

*CORRESPONDENCE
Emma-Louise Aveling
✉ eaveling@hsph.harvard.edu

RECEIVED 12 February 2023
ACCEPTED 24 April 2023
PUBLISHED 23 May 2023

CITATION
Aveling E-L, Roberts JE, Taylor LA, Bhuiya N and Singer SJ (2023) Business–nonprofit hybrid organizing: a dynamic approach to balancing benefits and costs.
Front. Health Serv. 3:1164072.
doi: 10.3389/frhs.2023.1164072

Business–nonprofit hybrid organizing: a dynamic approach to balancing benefits and costs

Emma-Louise Aveling[1]*, Jane E. Roberts[1], Lauren A. Taylor[2], Nazmim Bhuiya[3] and Sara J. Singer[4]

[1]Department of Health Policy and Management, Harvard T. H. Chan School of Public Health, Boston, MA, United States, [2]Department of Population Health, New York University School of Medicine, New York, NY, United States, [3]Massachusetts Department of Public Health, Boston, MA, United States, [4]Department of Medicine, Stanford University School of Medicine and Graduate School of Business, Stanford, CA, United States

Introduction: Efforts to address complex public health challenges can benefit from cross-sector collaboration, while also fostering growing business sector engagement in promoting health equity. What form business-nonprofit collaboration should take, however, is a difficult question for managers and leaders. Hybrid organizational forms, which combine for-profit and nonprofit elements within a single organization in unconventional ways, offer an innovative and potentially promising approach. Yet, while existing typologies of cross-sector collaboration have identified hybrid forms at one end of a continuum of possible forms of collaboration, these typologies do not differentiate the diversity such hybrid forms may take, and the costs and benefits of these innovative hybrid forms are poorly understood. This leaves managers interested in promoting public health through business-nonprofit hybrid organizing with limited guidance about how to maximize potential merits while mitigating drawbacks.

Methods: We performed a qualitative comparative case study of three examples of business-nonprofit hybrid organizing. Data collection included 113 interviews with representatives from 42 organizations and observation of case study activities. We used thematic analysis within and across cases to characterize the form of hybrid organizing in each case and to examine benefits and costs of different forms for supporting initiatives.

Results: We identified two hybrid, collaborative forms - Appended and Blended forms. Each form had benefits and costs, the significance of which shifted over time contingent on changing strategic priorities and operating environments. Benefits and costs of particular forms become more or less important for establishing and sustaining initiatives under different conditions, requiring a dynamic view.

Discussion: No particular form of business-nonprofit hybrid organizing is inherently better than another. Optimizing hybrid organizing and ensuring resilient collaborations may mean allowing collaborative forms to evolve. Practitioners can manage tradeoffs between benefits and costs through an ongoing process of assessing the fit between a given collaborative form, strategic priorities, and relevant features of the operating environment. This dynamic view offers important insights for ensuring the resilience of business-nonprofit collaborative efforts to enhance public health.

KEYWORDS

collaborative forms, hybrid organizing, cross-sector collaboration, qualitative, business

1. Introduction

The pandemic has underscored the significant potential for business to contribute to cross-sector initiatives addressing interrelated social, economic, and environmental drivers of health (1). Complex public health challenges, such as health inequities or food insecurity, cannot be addressed by any single sector acting alone (2). Innovative, cross-sector initiatives involving business and nonprofits represent an important opportunity for the private sector to contribute to public health. Such cross-sector initiatives could benefit from the diverse skills, resources, and knowledge for-profit businesses may bring, while also offering valuable opportunities to foster the growing appetite for business sector engagement in promoting health equity (3). However, what specific form this collaboration should take is a difficult question for private sector managers and leaders to answer. "Hybrid" organizational forms, which combine for-profit and nonprofit elements within a single organization in unconventional ways, offer an innovative and potentially promising approach to harness cross-sector collaboration for public health (4). Yet to date, insufficient attention has been paid to the diversity of forms such deeply integrated, hybrid collaborations may take (4, 5). Moreover, the relative benefits and costs of different hybrid forms are poorly understood. This leaves business managers interested in hybrid forms of business–nonprofit collaboration with limited guidance regarding how to maximize the potential merits for establishing and sustaining initiatives, while mitigating the drawbacks. In this paper, we draw on qualitative case studies of business–nonprofit hybrid organizing to identify lessons for optimizing this approach to supporting what we call "social purpose initiatives," i.e., initiatives targeting social, economic, and environmental factors that constitute critical foundations of public health.

2. Background

Collaboration between business and nonprofit organizations is well-established in practice and scholarship (6–8) and is a prominent feature of efforts to advance equitable public health on a global scale (2, 9). Such collaborations offer the potential to pool complementary resources to achieve more than either could alone by drawing on the strengths and mitigating the weaknesses of each sector (6). Changing demands and expectations for both sectors are fostering increasingly integrated forms of collaboration (10, 11). Drivers include increasing "institutional complexity," i.e., incompatible prescriptions for organizational norms and practices (12, 13); growing demands for business to demonstrate social responsibility to various stakeholders, including contributions to the health and wellbeing of societies in which they operate, and to do so in authentic and holistic ways that go beyond just philanthropy[1]; and intensified competition for resources among nonprofits (14). At their most integrated form, business–nonprofit collaborations may involve novel forms of hybrid organizing that blur sectoral boundaries and diverge from traditional business or nonprofit models (10). While hybrid business–nonprofit organizing offers promising innovation, it remains unclear which form may best support and sustain social purpose initiatives in a changing environment, so that they can make the desired contributions to public health.

2.1. From business–nonprofit interaction to hybrid organizing

Business–nonprofit collaboration is typically conceptualized on a continuum, ranging from time-limited philanthropy to deep, transformational integration of business and nonprofit resources, activities, norms, and managerial and governance structures (6). The integrated end of this spectrum can result in hybrid organizing, i.e., forms of business–nonprofit integration that combine for-profit and nonprofit organizational elements within a single organization in unconventional ways while maintaining a mixture of market- and mission-oriented practices, identities, norms, and rationales (15).

The literature on cross-sector collaboration says little about the diversity of forms that this type of deeply integrated, hybrid collaboration might take (5), although it *can* take many forms. Hybrid organizations may be legally structured as for-profit, nonprofit, or both. They can vary in the amount and configuration of integration of business and nonprofit elements, for example, in the degree of compartmentalization vs. merging of elements such as structures, practices, people, or identities (16–18). Some organizational scholars argue that hybrid forms are so dynamic that hybrid *organizing*—the verb—is a more accurate conceptualization than hybrid organizations (4). In addition to the lack of elaboration of the different forms hybrid organizing can take, the relative costs and benefits of these different forms have not yet been well understood (19).

2.2. Business–nonprofit hybrid organizing: a double-edged sword

Establishing and sustaining social purpose initiatives requires securing resources (e.g., funding, physical assets) and building relationships with key stakeholders (e.g., operational partners, funders). Existing literature suggests that hybrid organizing can create benefits and costs related to both these organizational needs, making the value of hybrid collaborative forms double-edged. If costs outweigh benefits, and/or collaborative efforts cannot be sustained, organizations cannot fulfill their mission, and synergistic benefits of collaboration for public health will not be achieved (2).

Hybrid organizing's ability to combine elements that "would not conventionally go together" (4) is the source of both its potential benefits and challenges (10). Hybrid organizing has the potential to achieve a "best-of-both-worlds" win for public

[1]Aveling E-L, Roberts J, Taylor L, Edmondson A, Singer S. Racial justice and health equity demand a "whole company" approach. *Forbes (Under Review)*. (2020).

health, enabling access to expanded resources and synergistic benefits of combining knowledge, skills, and expertise from nonprofit and business sectors (20). Simultaneously, differences in the assumptions, values, and norms of each sector—in institutional "logics"—can generate conflict, misunderstandings, and hinder organizational functioning and therefore the ability to accomplish an organization's health and social mission (12). Resource dependency theory (21) highlights the potential with hybrid organizing for imbalances in power and resources to result in the dominance of one element at the expense of another, e.g., dominance of business priorities over mission (22), attenuating social and public health benefits.

Central to securing both resources and productive relationships is the extent to which an organization is perceived as legitimate (23), i.e., its actions are perceived to be "desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (24). Hybrid organizing has been described as both a risk to and a strategy for securing and sustaining organizational legitimacy. On the one hand, business–nonprofit hybrid organizing may enable organizations to satisfy the expectations of a broader spectrum of stakeholders, thus helping to secure legitimacy to pursue organizational missions that include public health goals (12). On the other, where the combination of business and nonprofit elements violate established expectations for what is considered socially sanctioned organizational behavior, such as when a nonprofit appears to act too much like a business, initiatives may experience a legitimacy discount in the eyes of important stakeholders (25)—undermining its potential to secure resources and relationships needed to accomplish its public health goals.

Most prior research has focused on the tensions stemming from conflicting underlying logics that threaten the sustainability of hybrid organizing (19), and many factors affecting capacity to manage such tensions internally have been identified, including the following: the importance of strong, trusting interpersonal relationships; degree of alignment in partners' goals and interests (6, 8); value of boundary spanners and ambidextrous leaders able to bridge business and nonprofit worlds (12, 26); and microlevel processes supporting effective communication and safe spaces for negotiation (4, 27). These insights have been derived from and applied to diverse forms of hybrid organizing. Yet, the degree to which these costs and benefits vary across different forms of business–nonprofit hybrid organizing, what their implications are for establishing and sustaining initiatives targeting socioeconomic drivers of health, and how costs/benefits may vary given the contextual specifics of initiatives are less clear (5, 19). This is particularly problematic given the inherently double-edged nature of hybrid organizing. As such, organization leaders lack guidance about how to optimize business–nonprofit hybrid organizing to support resilient social purpose initiatives.

To address this gap, we conducted in-depth qualitative case studies of innovative business–nonprofit hybrid organizing that supported longstanding social purpose initiatives. These initiatives targeted different public health issues: two initiatives promoted physical activity among public school students to improve physical and socioemotional health and support academic success; the third targeted the lack of access to affordable, healthy food in low-income urban neighborhoods. From these cases, we characterized two distinct forms of business–nonprofit hybrid organizing: an *Appended form*, where a nonprofit unit is embedded within an established business, and a *Blended form*, where a newly established organization seeks to blend nonprofit and business elements throughout all units and activities. We then compared their strengths and weaknesses for supporting social purpose initiatives. Recognizing the potentially double-edged nature of business–nonprofit hybrid organizing, we also examined contextual factors that influenced the relative importance of these costs and benefits over time. From these findings, we outline a dynamic model of how practitioners can balance the trade-offs and optimize hybrid collaborative forms through an ongoing process of assessing fit between the characteristics of a given form, strategic priorities of the initiative, and relevant features of the operating environment. This dynamic view offers important insights for ensuring the resilience of business–nonprofit collaborative efforts and optimizing their value for public health.

3. Methods

We conducted three qualitative case studies of business–nonprofit hybrid organizing. Case studies facilitate a holistic perspective on the complex organizational processes within each case (28). By combining 113 interviews with representatives from 42 organizations, including practitioners in different roles in case study organizations, their collaborators, and local leaders from multiple sectors, and observations of case study activities, we triangulated diverse perspectives to gain a rich, in-depth understanding of the dynamics of each case and the contexts in which they operated. A comparative analysis across cases enabled us to move beyond descriptive accounts to identify analytically generalizable insights about the benefits and costs of hybrid organizing that were context-specific (29). We purposefully selected cases with some consistent features: all three cases were based in and served the same city; all three had sustained their social purpose initiative for 6–10 years at the time of research, allowing us to learn from successful cases and to take account of the dynamic nature of cross-sector, hybrid organizing over time (7). Cases were diverse in terms of business sector and the health focus of the initiative; we also purposefully selected cases that appeared to combine business and nonprofit elements in different ways—although characterizing the hybrid form was an aim of the investigation. Data collection took place between February 2018 and December 2019.

The research context was a medium-sized coastal city in the United States. The city and metropolitan area host many regional, national, and international companies in diverse sectors (from finance to clothing), including large health, technology, and education sectors. While the region enjoys relatively high levels of economic mobility and health, the city itself suffers significant inequity across racial and neighborhood lines.

The study received ethical approval from the [Institution suppressed] Institutional Review Board. Senior organizational

leaders agreed to the participation of organizations in the study, and interview participants provided individual informed consent. To protect participants' identities, we provide limited details on the organizations and location involved.

3.1. Data generation

For each case study, we interviewed members of the focal organization and its collaborating organizations and conducted observations. Details of these 75 interviewees and 16.5 h of observations are provided in Table 1. Within each case, we identified potential interview participants and observation opportunities in consultation with senior leaders from the focal organization. We interviewed 22, 32, and 21 individuals from cases one, two, and three, respectively. Interviewees included board members, core business staff (e.g., marketing staff), and staff primarily involved in the social purpose initiative (e.g., directors of development), from senior management (e.g., CEOs) to frontline roles (e.g., shopfloor, fieldworkers). Collaborating stakeholders included operational partners (e.g., staff of public schools where the initiative was being run, suppliers to the retail nonprofit), sponsors, and funders. While we cannot know whether case study gatekeepers steered us away from particular members or stakeholders, our data did include critical perspectives. Observations (of initiative activities, workspaces, and stakeholder meetings) provided alternative perspectives on the nature of hybrid organizing and organizational settings (e.g., physical spaces; interpersonal dynamics).

We also interviewed, as part of a larger study of cross-sector collaboration within the city, 38 local leaders from business, nonprofit, and public sectors with the experience of cross-sector collaboration (Table 2). For this paper, we used these interviews to deepen understanding of the operating environment of our case studies.

We conducted interviews using a semistructured guide, adapted to reflect interviewees' diverse roles. Questions covered organizational and social purpose initiative missions; roles, strengths, and limitations of different organizational units, stakeholders, and collaborating organizations and their contributions to the initiative; factors influencing the dynamics of business–nonprofit hybrid organizing, including national and local contexts. Interviews, conducted in person (in private workspaces) or by phone, lasted 33–98 min (average 56 min) and were audio-recorded and transcribed verbatim.

TABLE 1 Case study data: participants interviewed, and hours of observation, for each of three case studies.

Data generation method	Data source		*N*=
Case study 1: Appended form			
Observations	Initiative activities, office-based activities, staff meetings		**6.5 h**
Semistructured interviews	*Hybrid organization members*	Core business—senior and middle managers	6
		Social purpose initiative—senior and middle managers, frontline staff, board members	12
	External collaborators (operational partners)	Public sector organizations—senior managers, school-based staff	4
Total number of interview participants			**22**
Case study 2: Appended form			
Observations	Initiative activities, office-based activities, staff meetings		**5 h**
Semistructured interviews	*Hybrid organization members*	Core business—Senior managers, staff, board members	6
		Social purpose initiative—Senior and middle managers, staff	9
	External collaborators (Funders, operational partners)	Public sector organizations—senior managers, school-based staff	9
		Nonprofit organizations—Senior leader, manager, board member	3
		For profit organizations—Senior managers, staff	5
Total number of interview participants			**32**
Case study 3: Blended form			
Observations	Shop floor, on-side educational activities, community meeting		**5 h**
Semistructured interviews, focus group	*Hybrid organization members*	Senior and middle managers	7
		Board members	3
		Store managers	3
		Frontline staff (1 × focus group)	4
Semistructured interviews	*External collaborators (funders, operational partners)*	Nonprofit organizations—senior managers of local foundation, health, and social service organizations	4
Total number of interview and focus group participants			**21**
Total interview participants			**75**
Total hours of observation			**16.5**

Bolded values correspond to the text in the cell directly to the left.

3.2. Analysis

We analyzed data using reflexive thematic analysis (30), which involved generating themes through iteratively synthesizing systematic, open coding with existing concepts from relevant

TABLE 2 Local context interviews: interviews with local sector stakeholders involved in (noncase study) cross-sector organizing.

Organization type	Individual roles	Number
For profit: financial services and media sectors	Senior and middle managers (CSR, Marketing depts.)	11
Nonprofit: local organizations with diverse missions, from art, sport to youth empowerment; one university and one local business association	Senior managers, frontline staff, managers	25
Public Sector	One elected and one appointed city official	2
Total interview participants		38

theoretical and empirical literature on business–nonprofit collaboration, hybrid organizing, and institutional theory. Our analysis (supported by NVivo software) was oriented to (1) characterizing the form of hybrid organizing in each case, and (2) examining the context-specific benefits and costs of these different forms for establishing and sustaining initiatives.

To characterize the form of hybrid organizing in each case, we first analyzed data within-case, to create a descriptive account of how nonprofit and business elements were combined (e.g., in terms of governance, resource flows, interactions between units and staff). Subsequent cross-case interpretive, comparative analysis was oriented to characterizing common and contrasting features of the different forms of hybrid organizing, resulting in distinguishing two forms (Appended and Blended) across the three cases. This interpretive work was informed by existing typologies (17–19, 31).

To understand the benefits and costs of each form, we first coded data descriptively within case. We also coded the entire data set descriptively to capture and characterize the environment. We triangulated these descriptive accounts to compare and contrast costs and benefits and to identify cross-cutting themes. Through iterative cross-case comparison, informed by existing literature on hybrid organizing and institutional complexity (4, 12), we grouped patterns of benefits and costs around two main themes: material and relational resources. Analyses are presented using illustrative quotes, anonymized to protect individual and organizational identities.

4. Findings

We identified two distinct forms of business–nonprofit hybrid organizing—an *Appended form* (encompassing two case studies) and a *Blended form*—which we describe in Section 1. In Section 2, we describe the benefits and costs associated with each form and how these changed over time contingent on context, underscoring the need for a dynamic approach to sustain social purpose initiatives and pursue public health goals.

4.1. Two forms of business–nonprofit hybrid organizing

We differentiated Appended and Blended forms of hybrid organizing.

4.1.1. The Appended form

The Appended form of hybrid organizing entailed the coexistence of a nonprofit unit *within* a business. Each of our two cases of the Appended form (Case 1 and Case 2) combined operational and managerial integration of business and nonprofit elements with a degree of differentiation. Thus, distinct business- and nonprofit-conforming organizational elements were maintained, while the social purpose initiative was supported through resources and assets derived from both.

The initiatives in both Appended cases had been operational for approximately 10 years at the time of study and were both delivered in public schools. Both aimed to improve students' physical, socioemotional health, and school success through opportunities for physical activity and other forms of support. Organizations hoped that this would help reduce "gaps in academic achievement," with disparities in educational outcomes seen as one local driver of inequities in public health. Case 1 was established by the CEO of a large, privately owned industrials company, in response to the needs identified within the local public school district. Over 10 years, the initiative was formalized as a nonprofit housed within the business, and then, in the last 2–3 years, spun out to become increasingly independent and eventually registered as a 501c3 (charitable nonprofit). Case 2 started out as a small, community-led initiative. After approaching an international retail corporation to seek sponsorship, its founders and the corporation CEO agreed to bring the initiative in-house as the business's signature social purpose initiative. One of the founders became director of all the business's social purpose activities, with this initiative accounting for ∼90% of the business's social purpose funding. The initiative was housed within the business's foundation, which was colocated with the business's headquarters.

Business–nonprofit integration was reflected in colocation; significant staff interaction at multiple levels and shared managerial arrangements (e.g., social purpose initiative staff reporting to senior managers of the business, business staff occupying seats on the initiatives' boards); involvement of business employees in a broad range of activities supporting the initiative (e.g., weekly meetings, fundraising, IT support, volunteering). The for-profit "brand" and the social purpose initiative in each organization remained differentiated legally and structurally: the initiatives operated as discrete units with their own staff, workflows, management hierarchy, and advisory boards. Moreover, as described below, staff associated with business and nonprofit elements each sought to operate in accordance with the distinct norms and logics of their respective sectors.

Members described this approach as an opportunity to "get the best of both worlds" by conforming to normative expectations for both sectors, i.e., achieving the initiatives' mission would be best supported if the business elements did good business and the nonprofit staff carried out its roles in accordance with nonprofit best practices. Although not always easy to realize in practice (as we will describe), commitment to this Appended approach was epitomized in reports that staff embodying each element regarded each other as "experts in [their] own space" (Case 2, manager), while senior leaders from both business and nonprofit sides had a place at the table in determining the strategic direction of initiatives.

4.1.2. The blended form

The Blended case (Case 3) was a grocery retail nonprofit whose mission was to improve access to healthy, affordable food in low-income communities. Rather than compartmentalizing and maintaining a distinction between business and nonprofit

organizational elements, the Blended form sought to integrate nonprofit and business norms and practices across all units and structures of the organization into a novel, "unified and consistent framework for cognition and action" (4).

The grocery retailer was incorporated as a 501c3 (charitable) nonprofit that received philanthropic grant funding and also generated revenue through the sale of goods. Its CEO, who had a business background, recruited several senior managers with business degrees and a grant manager with experience of the nonprofit sector. Reduced cost or donated stock was acquired from food wholesalers, in line with dietary guidelines (excluding foods exceeding certain sugar, sodium, or fat content thresholds), and sold in the Blended organization's stores at substantially below-market prices.

The senior management's goal was to eventually break-even, with retail activities generating sufficient funding to sustain the organization, ending reliance on philanthropic grants and donations. Its founders believed that this was the unique value proposition that hybrid organizing offered—namely, that it was an organization that could reduce local food insecurity and be self-sustaining through its own sales. As one board member put it, breaking even was what made this organizational model "more intriguing" than simply "providing low-income people with food." In this sense, the Blended form sought to realize the transformative potential of diverging from both nonprofit and business norms, not only to get the best of both worlds but also to overcome the relevant weaknesses of each sector. On the nonprofit side, this meant reducing precarious dependence on winning grants; on the business side, it was avoiding traditional food retail market issues, such as lack of access to healthy food in low-income neighborhoods. "We've got to find collaborative solutions to a systemic problem. We are not a typical grocery store. […] One of the ways we're a force for good is we don't carry soda, cookies, cakes, pies. […] even if they would be high margin and add to sales, we sacrifice that" (Case-3, 018, Manager).

In practice, seamlessly blending business and nonprofit logics throughout the structures, systems, and practices of the organization proved challenging, as we will describe. Operational for 6 years at the time of research, the organization had yet to reach its goal of breaking even.

4.2. Contingent benefits and costs associated with different forms of hybrid organizing

Appended and Blended forms experienced benefits and costs associated with business–nonprofit hybrid organizing, as summarized in Table 3. The significance of these costs and benefits for securing the necessary resources, relationships, and legitimacy shifted over time contingent on the changing strategic priorities of each initiative and aspects of the environment in which they were operating (Figure 1). Organizational configurations of business–nonprofit integration were thus not static. Rather, case trajectories reflected recognition of the need to evolve in order to achieve their missions, with participants weighing up the potential pros and cons of both, more and less integration of business and nonprofit elements.

TABLE 3 Costs and benefits of Appended and Blended forms of business–nonprofit hybrid organizing.

	Appended form	Blended form
Benefits	*Material:* Reliable, large-scale financial support from (internal) business activities; expanded pool of potential resources through leveraging existing business networks (including clients, employees, contractors, and executives' personal networks); in-kind support (e.g., business employee volunteer time, "back-office" support).	*Material:* Potential to rely on a secure source of internally generated revenue from retail activities, reducing reliance on competing for grants; expanded pool of externally sourced support through leveraging organization members' cross-sectoral networks (e.g., board members' networks in the business community).
	Relational: Reputational halo of association with credible business helps broker implementing relationships locally; potential to win legitimacy through a distinct social purpose unit that conforms to a recognizable nonprofit form.	*Relational:* Appeal to some external audiences (e.g., business community, social entrepreneurs, nonprofit partners) on the basis of an atypical, innovative form, committed to social good but with the potential to be self-sustaining.
Costs	*Material:* Close association with wealthy business may deter other funders; over-reliance on internal funding can stymies fundraising capacity; difficulties prioritizing social purpose over business needs (e.g., for back-office support).	*Material:* Startup nature means revenue limited at start and covering costs relies on the successful growth of revenue/retail business.
	Relational: Being embedded within established business can compromise the ability to appear to conform to the norms of the nonprofit sector (e.g., due to the dominance of language, practices, and processes characteristic of the business sector).	*Relational:* Non-conformity to *either* a "pure" business or a nonprofit form (neither regular grocers nor recognizable food charities) limits appeal to some external audiences, e.g., target consumers.

4.2.1. Contingent benefits and costs of the Appended form

For Case 1 and Case 2, a key strategic priority in the early years was to gain visibility in the local organizational landscape and secure relationships with operational partners (local public schools) so that their business–nonprofits could establish the initiatives and demonstrate positive impacts. Over time, their priorities shifted to scaling-up and expanding into schools in other regions.

The local, organizational context was characterized by a crowded nonprofit landscape, with many well-known and long-established nonprofits, and a small, "tight knit," "philanthropically inclined" business community with dense ties across business, nonprofit, and public sector networks. In this context, the strengths of the Appended form were particularly valuable in the initiative's nascent phase. Initially, given the limited, local scale of the initiatives, *material* resources derived from the large, well-established businesses provided secure, reliable funding sufficient to cover the majority of the initiatives' costs. This was particularly valuable as initiatives did not yet have evidence of success to "hang their hat on" (Case 1, Senior

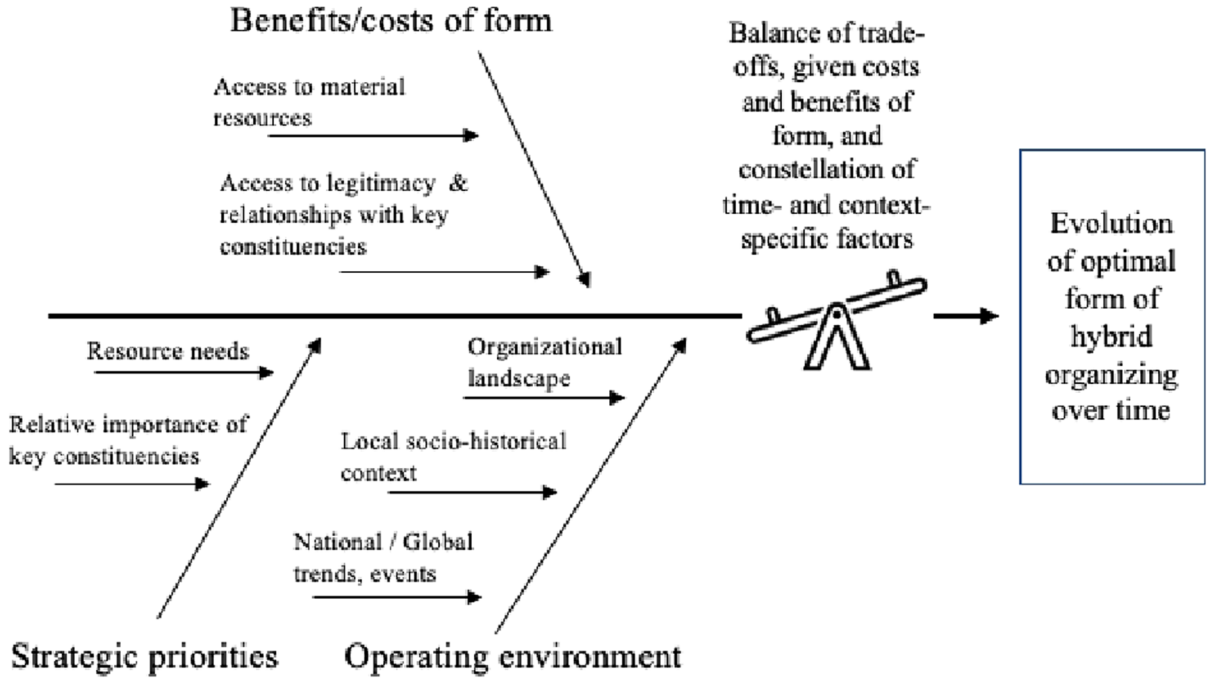


FIGURE 1
A dynamic model of optimizing hybrid organizing: maintaining fit between the costs and benefits of the collaborative form, and contextual and temporal contingencies.

manager) and so compete with other nonprofits for funding. In addition, initiatives benefited from businesses' back office operational and infrastructure support (e.g., from business' existing human resources, IT, or legal departments) and from expanded pools of potential donors via the businesses' well-established networks of employees, clients, contractors, and local civic leaders.

The *relational* benefits of Appended hybrid organizing were also high in the nascent phase. The local landscape was seen as challenging for new initiatives to break into and capture the attention of funders and potential board members. Tapping into business' existing networks and associating with a well-respected business and its leadership boosted the initiatives' credibility and profile with local business and civic leaders. At the same time, the hybrid form—being "so unique and different"—was thought to enhance confidence in the businesses as "truly committed to the community" (Case 1, Manager). Further, business leaders could leverage their civic and political connections within the city to broker essential relationships with operational partners in the public school system.

> I don't think, if a nonprofit wanted to jump into a dozen schools who was completely unknown without any connection to the city, would a Mayor or the Superintendent say, "Sure, come on in." So like the relationship and the trust that [the Mayor] and the Superintendent had with [Business CEO] I think allowed for mobility and access. (Case-1, 018, Manager)

However, as the strategic priority for initiatives shifted to scaling up, the value of these Appended form benefits waned. Expansion beyond the original locale where businesses were well networked exceeded what a single business could financially support. As the importance of attracting external funders increased, some of the costs associated with the Appended form became more prominent.

> Joining [the business] accelerated [the initiatives]'s growth by about five years. […]. The problem is that that lasted for about the first five years, and now I think being part of [the business] is actually hindering their growth. (Case-2, 028, Manager)

> This could be a national program […]. For that aspiration to happen the irony is we [the business] really have to sort of let it go. (Case-1, 025, Manager)

Participants reported that the initiatives' close association with a wealthy business or CEO created an impression that the initiative did not need external funders, or for other reasons (e.g., competitive business relationships) made it a less attractive funding recipient. Moreover, extensive early reliance on internal funding had stymied development of their capacity for effective external fundraising.

> It's a private foundation closely associated with a major brand. Why on earth would anyone else want to give money to that, right? (Case-2, 028, Board member)

> The [business] has always served as a backstop from a cash flow perspective, so the program is ahead of the development arm, I think, because of that, so we have a couple year lag. (Case-1, 014, Manager)

At this stage, staff feared that language, practices, or expenditures aligned with business but not nonprofit norms limited their ability to effectively compete for philanthropic funding. Nonprofit staff sought to capitalize on the differentiated structure of the Appended form to offset such legitimacy discounts by conforming to nonprofit norms and standard practices in areas that did not affect core business operations.

> *Participant*: It's like literally trying to right size the organization to use nonprofit standards and language. *Interviewer*: Why does it need to be done the way nonprofits do it? *Participant:* I mean, one, it's good because it actually keeps us in line with what high performing nonprofits are doing. […] it also lets people see that we're a thought leader as well in this universe. Our [other] funders wanna see it. (Case-1, 003, Manager)

> They [business-side staff] were eventually receptive to us saying, " […] our funding needs to go to fund schools, not to pay an advertising agency". (Case-2, 020, Staff)

Nonetheless, asymmetries between business and nonprofit elements meant that business priorities did sometimes prevail, e.g., marketing staff prioritizing work on "the brand" at the cost of the initiative. This particularly hindered the capacity to expand initiatives in line with achieving social purpose goals (e.g., due to organization-wide hiring freezes).

> I think some of the drawbacks are that we are confined to this [Business] system from a say hiring perspective, from a growth perspective […] If they go on a hiring freeze, we go on a hiring freeze. (Case-2, 022, Manager)

In both cases, some participants questioned whether continuing in this form was the optimal course for sustaining the initiative and maximizing its impact. In Case 2, most participants acknowledged a sense of dilemma, but opinions were mixed about whether the move should be toward greater or lesser integration:

> I think there are two paths: one, [business] starts investing more fully in [initiative] […] the other successful collaboration would be [business] commits to level funding for a five year period, spins [the initiative] out into a standalone public charity. (Case-2, 028, Board member)

In Case 1, although managers had agreed to spin out the initiative into an independent nonprofit organization, given the many perceived advantages of hybrid organizing, efforts toward separation were tentative, and much remained unclear about what form the business–nonprofit relationship would ultimately take.

> To play in the middle is pretty hard. […] we hit a crossroads […] that we have been in over the last two to three years of should we just–it's like you really almost have to go a little backward or you have to let it grow up and you create some real distance with that. (Case-1, 016, Manager)

4.2.2. Contingent benefits and costs of the blended form

The initial strategic priority for Case 3 was to raise the funds and secure the operating relationships (e.g., with suppliers, landlords) to open the first store. Over time, the aim was to gradually transition from early reliance on philanthropic support to sufficient sales revenue to sustain operations. These different sources of material support were associated with distinct stakeholders: (multi)national corporations and their associated foundations provided much of the startup funding; suppliers of discounted or donated stock included local and national companies and nonprofits; the desired consumer base was local residents. The Blended form experienced a mixture of legitimacy bonuses and discounts among these various stakeholders, influenced by national trends affecting the social expectations for business, the local organizational landscape described above, and features of the local sociohistorical context shaping residents' perceptions and expectations.

Regarding access to *material* resources to support the organization during its startup phase, the innovative potential of the Blended form—simultaneously a business and a nonprofit—was central to its appeal to critical resource-providing stakeholders. The promise of self-sufficiency and a retail-based solution to solving the lack of access to healthy food increased its appeal among businesspeople and corporate funders; they, in turn, helped raise its profile, contributed funding, or supplied discounted stock or food. Blended organization senior leaders leveraged their business reputations and networks to enhance this appeal to the business community to support their social mission.

> Its mission and proposition is so compelling, and that's the reason [we/company] care so deeply about it and want to make the model work […] you have to run a great business, but I believe you can do that, and affordable nutrition is something we can't give up on. (Case-3, 012, Board Member)

> [Founder] has got more influence and connections than I'll ever have. (Case-3, 008, Nonprofit collaborator)

At the same time, being able to signal credibly that it was a nonprofit also helped to boost legitimacy with key nonprofit operating partners, including a local nonprofit landlord and a sizeable food bank that contributed to its supply chain.

> I mean we probably gave them a break on rent because of their nonprofit status. (Case-3, 007, Nonprofit collaborator)

Local residents were the would-be consumers who represented both the constituency that the Blended form aimed to serve through healthy, affordable grocery offerings, and on whom it depended for retail revenue to break-even. With this group, legitimacy was more problematic, as the organization's hybrid form conformed to expectations for neither a regular grocery store nor a nonprofit foodbank. As the organization was reliant on donated and reduced cost goods, and limited to stock that met its strict nutritional standards, some products local shoppers expected from a grocery store were not stocked, while others were inconsistently available and priced. This led to shopper critiques and doubts about the organization's legitimacy as a business akin to other grocers.

> I'd say the most difficult part of working here is not everybody understands the purpose of the store, so sometimes I feel like a broken record trying to explain things […] why you don't have soda on the shelves or why there's not these certain chips (Case-3, Focus group, Staff)

Some staff believed marketing the organization as a nonprofit would help the local community understand that the low prices being offered were not a scam. However, other staff pointed to doubts about its credentials as a nonprofit, not least because it sold rather than gave away its (partially donated) stock.

Customers will say "I hear that 90% of your stuff is donated. Why are you selling at this price?" (Case 3, 005, Staff).

Moreover, in a city marked by stark inequities and structural racism, the Blended organization had to battle deep local skepticism about both business and nonprofits: skepticism that it was a business looking to profit off the indignities of local food deserts, and skepticism that it was one more nonprofit led by affluent outsiders that would ultimately let down local residents. For example, initial store openings had been delayed because of concerns that the organizational model amounted to selling rotten food to poor people.

> It's more this stigma of what they believe that we were about. They believe that we were the "sell you out-of-date [food]" people. (Case-3, Focus group, Staff)

> We had a [neighborhood leader] saying "Well geez. This is White people bringing food into this [neighborhood], and if it's so great, why don't they do it in [founder's neighborhood]". (Case-3, 006, Board member)

Challenges blending nonprofit and business cultures and balancing revenue-generation and public health goals led to internal debates, which slowed decision-making and which staff found hard to resolve without risking commitment to one or other set of goals. For example, organization members consistently struggled to decide on stock and pricing that struck the right balance between generating sufficient revenue and satisfying the mission.

> So from the top down, or from procurement or CEO, they're like, "Yes, we'll take that donation." And I'm like, "No, we can't." [due to nutritional guidelines] So you know, those things can be difficult. (Case-3, 016, Staff)

> It is the nature of our mission that has complicated our life and made it much more difficult (a) to do business (b) to attract customers and (c) to communicate who we are to the community. (Case-3, 018, Manager)

At the time of data collection, retail sales had not grown as rapidly as hoped, requiring more reliance on philanthropic funding than anticipated. This reality was raising questions about whether to continue to pursue aspirations for breaking even through blending business and nonprofit elements or pivot to a more traditional nonprofit form and long-term reliance on philanthropic funding. At the same time, some were also questioning how much longer the organization would be able to secure philanthropic funding in its current form.

> I mean that really speaks to like the unique identity crisis that [Case-3] faces, is that we could choose one or the other. We could choose to go full-on nonprofit, and choose to be entirely funded through philanthropy, and just exist. Or we can just choose to be a grocery store, and get rid of our nutrition guidelines that are a huge restriction that we imposed on ourselves, and be profitable that way. (Case-3, 015, Staff)

5. Discussion

To harness the potential value of business–nonprofit hybrid organizing to support social purpose initiatives and advance public health, managers and leaders require a greater understanding of the different collaborative forms such hybrid organizing may take, and of the relative merits of different forms. Having distinguished Appended and Blended forms of business–nonprofit hybrids, our findings indicate the necessity of a dynamic model of hybrid organizing, both to optimize the benefits for initiatives targeting social and economic drivers of health and to enable resilience over time.

5.1. Comparing appended and blended forms of business–nonprofit hybrid organizing

The Appended form had several advantages as an innovative means of fostering private sector contributions to promoting equitable public health. The differentiated structure, combining integration with a degree of compartmentalization, helped secure resources and legitimacy for the initiative by enabling the responsible unit to conform to key nonprofit norms (4, 17). At the same time, the larger size and resources of the host business

enabled their nonprofit elements to break into and establish their initiatives in a competitive nonprofit landscape, by drawing on the established business' networks, reputation, in-kind, and financial resources. These advantages run counter to literature, which emphasizes the costs of asymmetry for nonprofits and achieving social missions (21). As such, our findings challenge overly simplistic views of asymmetrical integration, which focus only on the risks to nonprofits of engaging with resource-rich(er) businesses (14).

Nonetheless, we also saw that Appended hybrid organizing became disadvantageous when it threatened the initiative's ability to compete with other initiatives on nonprofit terms and when business–nonprofit asymmetries prevented capitalizing on the complementary knowledge and expertise of business members. These costs became especially problematic as strategic priorities shifted from establishing to scaling up the initiative. This suggests that existing, well-resourced businesses may have an especially valuable role to play in launching and nurturing social purpose initiatives via Appended hybrid organizing.

In contrast to the Appended forms' reliance on conforming to sectoral norms, the Blended form sought to sustain itself by diverging from purely nonprofit or business norms. This innovative mix of being entirely mission-driven *and* financially self-sustaining was critical to its ability to secure the relationships and resources (especially from the corporate sector) to get established. The future social and economic value of this integrated form also helped to sustain the commitment of the CEO and other members to persevere with inherent managerial challenges (17). However, there were two major drawbacks to achieving its mission, both of which were managerial. The first was the complexity of blending business and nonprofit elements into a unified and consistent framework. The second was effectively selling this atypical identity to the local residents it sought to serve and on whom it relied to generate retail revenue. These findings suggest that harnessing the Blended form to achieve the desired social and health impacts may require especially high levels of managerial dexterity. This aligns with existing literature documenting the internal managerial challenges of seamlessly integrating nonprofit and business elements (12, 18) and the relative advantages of compartmentalization to do so (4, 17).

Our findings further suggest, however, that it is not only the capacity to manage tensions internally that managers must consider but also the characteristics of the external stakeholders among whom they seek recognition as legitimate. Specifically, managers must consider how fragmented and legible those stakeholders may be. Key stakeholders for the Appended form included public sector organizations (public schools) and philanthropic funders from the nonprofit or business worlds. Squarely embedded within one or other extant sector (nonprofit, public, or business), where the normative criteria for evaluations of the organization are relatively clear (19), the expectations of these stakeholders were quite clear to managers of the Appended form. Senior leaders of the Blended form also had some success winning legitimacy in the eyes of stakeholders rooted in defined sectors with which they were familiar (e.g., the corporate sector). However, its would-be customers comprised a heterogenous and much less well-defined constituency, which appeared less legible to the Blended organization's managers. In evaluating the relative merits of a given form of hybrid organizing, managers must therefore also invest in efforts to understand and take account of characteristics of the stakeholders on whom their success depends, particularly their anticipated receptivity to an unconventional organizational form.

5.2. A dynamic model of optimizing business–nonprofit hybrid organizing

While each hybrid collaborative form has certain characteristics and related benefits and costs, recognition of the context-specific nature of these benefits and costs is central to our contribution. For each form, the significance of benefits and costs depended on interrelated and dynamic factors, including changes in resource needs and the relative importance of different external stakeholders as strategic priorities evolved, and features of the context that could heighten or attenuate these benefits and costs. This dynamic model of the balance of trade-offs (**Figure 1**) makes clear that optimizing hybrid organizing for public health entails an ongoing process of assessing and seeking fit between form and context in ways that allow the form to evolve. Further, this implies a need to move away from implicitly normative frameworks wherein the trajectory of evolution is always oriented toward greater integration, while separation represents failure or abandonment (22, 31). Rather, the optimal form may differ for different types of organizations and at different times. Thus, determining the optimal form of hybrid organizing is not a one-time decision, but a decision that requires continual review. Moreover, scholars and practitioners must recognize that separation may represent a positive evolution and can entail productive, ongoing relationships in a different collaborative form. Further research is needed to better understand how to optimize evolution of the collaborative form at later stages than our cases allowed (32), including research that elucidates pathways to successful separation.

This dynamic model also advances an understanding of the double-edged nature of hybrid organizing in relation to legitimacy bonuses and discounts, specifically, the importance of attending to the *temporal* dimension of legitimacy dynamics and the ways in which changes in strategic priorities over time (e.g., launching vs. scaling an initiative) influence how consequential the perceptions of different stakeholders are to achieving the organizations' mission. For example, as the Blended form sought to increase the proportion of revenue generated through sales, local residents' views of the legitimacy of this collaborative form became more significant, prompting a consideration of the need to evolve the approach to hybrid organizing.

In addition to strategic priorities, our model identifies contextual features as another set of factors for managers to consider in navigating the ongoing assessment of fit. Previous literature has noted how wider societal trends may be driving

a greater acceptability of organizational forms that span sectoral boundaries (6), perhaps even institutionalizing hybrid forms as a distinct fourth sector (33). Our study highlights the significance of *local* organizational and socioeconomic influences on hybrid forms. Building on Marquis and colleague's (34) work, our findings suggest that community isomorphism, i.e., the resemblance of a corporation's social practices to those of other corporations within its community, is important in shaping the perceived merits of different forms of business–nonprofit hybrid organizing. In this case, community isomorphism appeared to galvanize business' willingness to support hybrid organizing, while features of the social and historical context further complicated the Blended form's difficulties, successfully appealing to the local residents. Hence when assessing fit with context, practitioners need to attend not only to national societal or business trends but also to specific local social histories and organizational landscapes, and how they may intersect.

Of course, contexts are themselves dynamic. Although outside our study frame, the current moment—including the impacts of a global pandemic and intensifying movement for racial justice—has created exogenous shocks that could precipitate changes in the balance of trade-offs. For example, such shocks might affect the availability of funding from particular sources, galvanize business' interest in contributing to public health, or intensify skepticism and distrust of certain institutions. Understanding the impacts of these contemporary changes in the operating environment will require further investigation. Nonetheless, in contrast to static models of the hybrid organization, our dynamic model provides a valuable foundation for enabling resilience through an evolution of hybrid organizing by orienting to a continual assessment of fit between context, strategic priorities, and merits of a given form.

5.3. Study limitations

Our study was limited to three cases in a single context. The study included more data about the Appended form than the Blended, reflecting differences in the size of organizations, and identification of two Appended cases (because identification of the form was an output of analysis and not part of the selection criteria). The forms we identified may not be exhaustive. Other forms of business–nonprofit hybrid organizing, and similar forms in other contexts, may expand the range of the strengths and weaknesses identified and/or highlight additional factors on which the balance of trade-offs is contingent. We purposefully selected initiatives that were successfully sustained; an examination of less successful collaborations may generate additional insights into associated risks. Cases with even longer trajectories could further illuminate evolution and transitions between forms of hybrid organizing. Further, in focusing on comparison and distinctions between cases, we attended less to what made each trajectory unique (e.g., differences between Appended cases).

Additionally, measuring the impact of initiatives and how impact related to forms of organizing was beyond our scope. Moreover, a consideration of social value may be important for how practitioners weigh the relative benefits and costs of different forms. For example, the challenges associated with the Blended form may be considered more tolerable because of the form's transformative potential to tackle underlying structural drivers, e.g., addressing market failures that result in inequitable access to affordable healthy food.

6. Conclusion

Despite the proliferation of hybrid organizing at the interface of nonprofit and business sectors, existing typologies of cross-sector collaboration inadequately differentiate the diverse forms that deep business–nonprofit integration may take. Moreover, the relative merits of these forms, the contradictory mix of associated legitimacy discount and bonuses, and the conditions under which costs or benefits may be more or less salient are not well understood (4, 5). In this paper, we have contributed to the conceptual development of existing typologies of collaboration by describing two distinct integrated forms of business–nonprofit hybrid organizing—Appended and Blended—and by characterizing the potential benefits and costs associated with each form. The differences we highlighted in the pattern of relative costs and benefits underscore the importance of differentiating between forms of business–nonprofit hybrid organizing. Our findings also point to different ways in which businesses can contribute to collaborations targeting complex public health issues, via different roles in establishing, nurturing, sustaining, and/or spinning off social purpose initiatives into independent ventures.

Equally important, however, is that our findings demonstrate that the costs and benefits of these different collaborative forms are not static or fixed traits. Rather, we have outlined a dynamic model (depicted in **Figure 1**) in which the optimal form of hybrid organizing depends on the interplay between the characteristics of the form, the strategic priorities of the initiative, and the relevant features of the operating environment. This model has several implications for organizational theory and for managers interested in harnessing the potential of deeper business–nonprofit integration to impact public health. First, it makes clear the importance of avoiding normative typologies which suggest that more vs. less integration, or any particular form of hybrid organizing, is inherently better. Instead, it draws attention to the contingent nature of benefits and costs, and to the potential for positive evolution to be toward more *or* less an integration of nonprofit and business elements over time. Second, this model adds a more nuanced understanding to the contradictory picture of coexisting benefits and costs by helping to identify some of the conditions under which the benefits or costs of hybrid organizing become more or less valuable or problematic for establishing and sustaining a social purpose initiative. Third, as a framework for decision-making, it directs the attention of practitioners to the importance of an ongoing

process of assessing and seeking fit and outlines a set of factors that managers should consider as they weigh the balance of the trade-offs of different forms of business–nonprofit hybrid organizing. Fourth, in foregrounding a dynamic view of business–nonprofit hybrid organizing, this model promotes an orientation to evolving and adapting collaborative forms in order to ensure resilience and the ability to sustain efforts to promote health equity for the long term (35).

Data availability statement

Anonymized data that support the findings of this study are available on reasonable request from the authors. The dataset generated and analyzed during the current study are not publicly available since they contain information that could compromise research participant privacy/consent.

Ethics statement

This study was reviewed and approved by the Institutional Review Board, Harvard Chan School of Public Health. Interview participants provided individual informed consent.

Author contributions

E-LA, LT, and SS contributed to the conception and design of the study. All authors conducted interviews and gathered archival data. E-LA, JR, and NB performed qualitative analysis. E-LA wrote the first draft of the manuscript. All authors conducted interviews and gathered observation data.

Funding

Support for this research was provided by the Robert Wood Johnson Foundation (grant #74275 and #77667). The views expressed here do not necessarily reflect the views of the Foundation.

Acknowledgments

We sincerely thank all of the participants for giving us their time and sharing their views and experiences with such generosity, candor, and insight. We also thank all of the organizations and their representatives who helped facilitate access and data collection. We thank Chelsea Heberlein for her help in preparing the manuscript.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

1. Serafeim G, Rischbieth AM, Koh HK. Sustainability, business, and health. *JAMA*. (2020) 324(2):147–8. doi: 10.1001/jama.2020.8714

2. Lasker RD, Weiss ES, Miller R. Partnership synergy: a practical framework for studying and strengthening the collaborative advantage. *Milbank Q*. (2001) 79 (2):179–205. doi: 10.1111/1468-0009.00203

3. Kyle MA, Seegars L, Benson JM, Blendon RJ, Huckman RS, Singer SJ. Toward a corporate culture of health: results of a national survey. *Milbank Q*. (2019) 97 (4):954–77. doi: 10.1111/1468-0009.12418

4. Battilana J, Besharov M, Mitzinneck B. On hybrids and hybrid organizing: a review and roadmap for future research. In: Greenwood R, Oliver C, Lawrence TB, Meyer R, editors. *The SAGE handbook of organizational institutionalism*. London: SAGE Publications Ltd. (2017). p. 128–62. doi: 10.4135/9781526415066

5. Gazley B, Guo C. What do we know about nonprofit collaboration? A systematic review of the literature. *Nonprof Manag Leadersh*. (2020) 31(2):211–32. doi: 10.1002/nml.21433

6. Austin JE, Seitanidi MM. Collaborative value creation: a review of partnering between nonprofits and businesses: part I: value creation Spectrum and collaboration stages. *Nonprofit Volunt Sect Q*. (2012) 41(5):726–58. doi: 10.1177/0899764012450777

7. Bryson JM, Crosby BC, Stone MM. The design and implementation of cross-sector collaborations: propositions from the literature. *Public Adm Rev*. (2006) 66:44–55. doi: 10.1111/j.1540-6210.2006.00665.x

8. Mirońska D, Zaborek P. NGO—business collaboration: a comparison of organizational, social, and reputation value from the NGO perspective in Poland. *Nonprofit Volunt Sect Q*. (2019) 48(3):532–51. doi: 10.1177/0899764018797476

9. Holt DH, Aveling EL. Achieving partnership synergy: resource inputs, shared mission and interdependencies in Danish health promotion partnerships. *Health Promot Int*. (2023) 38:1. doi: 10.1093/heapro/daac203

10. Battilana J, Dorado S. Building sustainable hybrid organizations: the case of commercial microfinance organizations. *Acad Manage J*. (2010) 53(6):1419–40. doi: 10.5465/amj.2010.57318391

11. Maier F, Meyer M, Steinbereithner M. Nonprofit organizations becoming business-like: a systematic review. *Nonprofit Volunt Sect Q*. (2016) 45(1):64–86. doi: 10.1177/0899764014561796

12. Greenwood R, Raynard M, Kodeih F, Micelotta ER, Lounsbury M. Institutional complexity and organizational responses. *Acad Manag Ann*. (2011) 5(1):317–71. doi: 10.1080/19416520.2011.590299

13. Min BH. Hybridization in government–civil society organization relationships: an institutional logic perspective. *Nonprof Manag Leadersh*. (2022) 32(3):409–28. doi: 10.1002/nml.21484

14. Bouchard M, Raufflet E. Domesticating the beast: a "resource profile" framework of power relations in nonprofit–business collaboration. *Nonprofit Volunt Sect Q*. (2019) 48(6):1186–209. doi: 10.1177/0899764019853378

15. Haigh N, Hoffman AJ. The new heretics: hybrid organizations and the challenges they present to corporate sustainability. *Organ Environ*. (2014) 27 (3):223–41. doi: 10.1177/1086026614545345

16. Kraatz M, Block E, Davis J, Glynn M, Hoffman A, Jones C, et al. Organizational implications of institutional pluralism. In: Greenwood R, Oliver C, Suddaby R, Sahlin K, editors. *The SAGE handbook of organizational institutionalism*. London: SAGE Publications Ltd. (2008). p. 243–75. doi: 10.4135/9781849200387

17. Pratt MG, Foreman PO. Classifying managerial responses to multiple organizational identities. *Acad Manag Rev*. (2000) 25(1):18–42. doi: 10.2307/259261

18. Whetten D, Foreman P, Dyer WG. Organizational identity and family business. In: Melin L, Nordqvist M, Sharma P, editors. *The SAGE handbook of family business*. London: SAGE Publications Ltd. (2014). p. 480–97. Available at: https://www.academia.edu/1958765/Organizational_identity_and_family_business

19. Battilana J, Lee M. Advancing research on hybrid organizing—insights from the study of social enterprises. *Acad Manag Ann*. (2014) 8(1):397–441. doi: 10.1080/19416520.2014.893615

20. Pache A-C, Santos F. Inside the hybrid organization: selective coupling as a response to competing institutional logics. *Acad Manag J*. (2013) 56(4):972–1001. doi: 10.5465/amj.2011.0405

21. Selsky JW, Parker B. Cross-sector partnerships to address social issues: challenges to theory and practice. *J Manage*. (2005) 31(6):849–73. doi: 10.1177/0149206305279601

22. Ashraf N, Ahmadsimab A, Pinkse J. From animosity to affinity: the interplay of competing logics and interdependence in cross-sector partnerships. *J Manag Stud*. (2017) 54(6):793–822. doi: 10.1111/joms.12273

23. Boxenbaum E, Arora-Jonsson S. Isomorphism, diffusion and decoupling. In: Greenwood R, Oliver C, Suddaby R, Sahlin K, editors. *The SAGE Handbook of organizational institutionalism*. London: SAGE Publications Ltd. (2008). p. 78–98.

24. Suchman MC. Managing legitimacy: strategic and institutional approaches. *Acad Manag Rev*. (1995) 20(3):571–610. doi: 10.2307/258788

25. Hsu G. Jacks of all trades and masters of none: audiences' reactions to spanning genres in feature film production. *Adm Sci Q*. (2006) 51(3):420–50. doi: 10.2189/asqu.51.3.420

26. Murray F. The oncomouse that roared: hybrid exchange strategies as a source of distinction at the boundary of overlapping institutions. *Am J Sociol*. (2010) 116 (2):341–88. doi: 10.1086/653599

27. Bishop S, Waring J. Becoming hybrid: the negotiated order on the front line of public–private partnerships. *Hum Relat*. (2016) 69(10):1937–58. doi: 10.1177/0018726716630389

28. Yin RK. *Case study research: design and methods*. 3rd ed. London: Sage Publications (2003).

29. Druckman D. *Doing research: methods of inquiry for conflict analysis*. London: Sage Publications, Inc (2005), pp. xv, 387.

30. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qual Res Psychol*. (2021) 18(3):328–52. doi: 10.1080/14780887.2020.1769238

31. Austin JE. Strategic collaboration between nonprofits and businesses. *Nonprofit Volunt Sect Q*. (2000) 29(1):69–97. doi: 10.1177/089976400773746346

32. Rama Murthy S, Roll K, Colin-Jones A. Ending business-nonprofit partnerships: the spinout of social enterprises. *Scand J Manag*. (2021) 37:1. doi: 10.1016/j.scaman.2020.101136

33. Sabeti H. The for-benefit enterprise. *Harv Bus Rev*. (2011) 89(11):98–104. Available at: https://hbr.org/2011/11/the-for-benefit-enterprise (Accessed September 12, 2022).

34. Marquis C, Glynn M, Davis G. Community isomorphism and corporate social action. *Acad Manag Rev*. (2007) 32(3):925–45. doi: 10.5465/amr.2007.25275683

frontiers | Frontiers in Health Services

TYPE Brief Research Report
PUBLISHED 08 June 2023
DOI 10.3389/frhs.2023.1165928

OPEN ACCESS

EDITED BY
Frances Garfield,
Mass General Brigham, United States

REVIEWED BY
Natasha Eslami,
Ernst and Young, United States
Amy S. White,
Lehman College, United States
Thomas Bias,
West Virginia University, United States
Henry Stabler,
University of Minnesota Twin Cities, United States

*CORRESPONDENCE
Berkeley Franz
franzb@ohio.edu

RECEIVED 14 February 2023
ACCEPTED 26 May 2023
PUBLISHED 08 June 2023

CITATION
Cronin CE and Franz B (2023) The public availability of hospital CHNA reports: limitations and potential to study hospital investments in the next phase of public health.
Front. Health Serv. 3:1165928.
doi: 10.3389/frhs.2023.1165928

The public availability of hospital CHNA reports: limitations and potential to study hospital investments in the next phase of public health

Cory E. Cronin[1,2] and Berkeley Franz[2,3]*

[1]College of Health Sciences and Professions, Ohio University, Athens, OH, United States, [2]Appalachian Institute to Advance Health Equity Science, College of Health Sciences and Professions, Ohio University, Athens, OH, United States, [3]Heritage College of Osteopathic Medicine, Ohio University, Athens, OH, United States

Nonprofit hospitals have been required to complete and make publicly available their community benefit reports for more than a decade, a sign of changing expectations for private health care organizations to explicitly collaborate with public health departments to improve community health. Despite these important changes to practice and policy, no governmental agency provides statistics regarding compliance with this process. To better understand the nature and usefulness of the data provided through these processes, we led a research team that collected and coded Community Health Needs Assessment (CHNA) and Implementation Strategy (IS) Reports for a nationally representative sample of hospitals between 2018 and 2022. We utilized descriptive statistics to understand the frequency of noncompliance; *t*-tests and chi-square tests were employed to identify characteristics associated with incomplete documents. Approximately 95% of hospitals provided a public CHNA, and approximately 86% made their IS available. The extent of compliance with the CHNA/IS mandate indicates that these documents, paired with existing public health and policy data, offer considerable potential for understanding the investments nonprofit hospitals make to improve health outcomes and health equity in the communities they serve.

KEYWORDS

hospitals, public health, community benefit, population health, data

Introduction

The Affordable Care Act (ACA) brought renewed attention and regulation to nonprofit hospitals' community benefit investments, which are required by the Internal Revenue Service (IRS) in exchange for 501(c)(3) status as charitable organizations (1). Although hospitals traditionally have met these requirements by providing free or reduced cost medical care (2) the vast expansion in health insurance coverage required new hospital activities, including investments to identify pressing community health needs, and the development of programs to improve community health. Specifically, hospitals must conduct assessments of their communities on a triennial basis, with input from with public health departments and other local health stakeholders. Hospitals must then document that they take into account the most critical community health needs when making local investments by producing public documentation in the form of community

health needs assessments (CHNAs) and developing implementation strategies (ISs) to respond to community needs, which must be adopted by an authorized body of the hospital facility (3). These public CHNA reports and resulting ISs provide an opportunity for transparency by hospitals and a collaborative effort between public and private health entities within a community; they also allow for systematic analyses by public health researchers and policymakers considering whether hospitals' community-oriented investments are in response to local need, evidence-based, and of appropriate value (4, 5). A recent study found that 40% of hospitals have neglected to make these documents publicly available, and the finding raises questions about the best way to analyze these filings (6).

The aim of this report is to assess the extent of missing community benefit documents (e.g., CHNAs and ISs not made publicly available online or by request) in a nationally representative sample of hospitals, as well as to discuss strategies for using these public documents successfully in public health research. This study is significant because these reports provide considerable insight into how hospitals are making investments into their surrounding communities and very little national research exists on the availability or completeness of these reports. Hospitals are likely familiar with and attuned to the communities they are assessing, creating the potential for valuable insights both for individual communities to hold these organizations accountable and for understanding larger regional and national trends on hospital population health investments. Our study is the first to use a nationally representative dataset to assess the strengths and weaknesses of using community benefit reports, including what gaps exist in the public availability of these reports and whether they are systematic in nature.

Methods

To better understand the role that hospitals play in improving community and population health, we established a nationally representative sample of nonprofit hospitals, and collected their CHNA and IS reports to serve as a foundation for ongoing research. Specifically, we constructed a dataset using a 20% random sample of hospitals from the national hospital population. The sample was drawn from the American Hospitals Association Annual Survey and stratified by state, to ensure that 20% of each state's hospitals were included in the sample. The characteristics of the hospitals in this sample were then compared to those in the national population and found to be representative (7).

Our next step to create the dataset was to gather CHNA and IS documents from the sampled hospitals, either by visiting hospital websites or by making direct requests to the hospitals. Because nonprofit hospitals are required to complete the CHNA process only once every 3 years, beginning in either 2012 or 2013, we used 3-year cycles (2015–2018, 2018–2021) to track each round of reports filed on a triennial basis. After downloading or receiving the publicly available PDFs, we coded these reports using a systematic protocol (8) to assess the top identified needs, whether hospitals adopted corresponding strategies to address those needs, and many additional variables related to the community benefit planning process and partnerships. If reports were not available online or were not made available by request, we coded two dichotomous variables for whether the CHNA or IS were missing. The vast majority of documents accessed for this study were posted online; hospitals without documents posted online were contacted via email with a request for their documents. Only three hospitals provided documents in response to this request.

Using the FIPS code in each hospital county, we then paired our sample of hospitals with community data from the 2018 County Health Rankings and Roadmaps Initiative and the Area Health Resource File, to assess overlap with health needs identified in secondary data, and to identify key predictors of hospitals not completing the required documentation (7, 9, 10). At the organizational level, we included hospital characteristics such as whether they were a part of a larger system (as compared to being an independent facility), the mean number of beds, whether the hospital is defined as a major teaching hospital by the American Association of Medical Colleges, and the average number of annual patient discharges. At the county level, we included measures of median income, the percent of residents who are unemployed, the percent of residents who are classified as rural, the percent of residents reporting poor/fair health (as compared to good/excellent health), the percent of residents who do not have health insurance, and the percent of residents who fall under the federal poverty line.

We calculated descriptive statistics to assess the percentage of hospitals that did not make their community benefit reports publicly available. Additionally, we used *t*-tests and chi-square tests to compare hospitals with missing reports to those that provided the reports to determine if there were systematic reasons for non-compliance. We used Stata 17 to conduct all statistical analyses.

Results

In the most recent wave of data, spanning 2018–2021, we find that 503 of the 582 hospitals in our sample (86%) made both the CHNA and IS publicly available (**Table 1**). Of the 79 hospitals with missing reports, 29 had made neither the CHNA or IS available. We identified a 95% completion rate for CHNAs and an 86% completion rate for ISs (**Figure 1**). These numbers were consistent with our analysis of the previous wave of data, which showed a 94% CHNA and an 85% IS completion rate; although some hospitals that completed in the first wave did not complete in the second, and vice versa.

Overall, hospital and community characteristics appear to have little relationship to a hospital's likelihood of completing and making these reports publicly available. Only system membership and community unemployment are significant predictors of report completion. System members were significantly more likely to complete documents ($p = .047$); and hospitals in communities with higher unemployment were significantly less likely ($p = .017$).

TABLE 1 Descriptive statistics for hospital community benefit document compliance, 2018–2021.

	Complete: publicly available CHNA and IS	Incomplete: missing CHNA and/or IS	*p*
Frequency	503	79	
Percent	86%	14%	
Hospital characteristics			
Hospital bed size (mean)	229	226	.921
Hospitals in health system	75%	65%	.047
Hospitals major teaching	10%	4%	.084
Hospital annual discharges (mean)	8,678	7,677	.497
Community characteristics			
Persons reporting poor/ fair health (mean percentage)	16%	16%	.183
Uninsured (mean percentage)	9.25%	8.58%	.178
Persons in poverty (mean percentage)	13%	13%	.976
County rural residents (mean percentage)	33%	30%	.420
Unemployment (mean percentage)	3.93%	4.25%	.017
Median household income (mean)	$57,515	$56,190	.491

Discussion

Understanding the extent and pattern of missing data helps to establish these documents as reliable data for public health research and helps to identify the rate of noncompliance, which comes with consequences ranging from fines to loss of 501(c)(3) status altogether. The goal of this analysis was to understand what gaps exist in the public availability of CHNAs and ISs, and to what extent these gaps are systematic or random. By building a nationally representative dataset of nonprofit hospitals, our findings suggest that non-compliance is not as high as one recent study suggested (11). Importantly, our approach utilized the 3-year spacing required by the IRS when studying hospitals' community benefit investments, and assessing the extent of missing data which may account for this difference. Because hospitals had flexibility regarding whether to start their triennial cycle in 2012 or 2013, assessing hospital documents in any given year may overestimate the rate of noncompliance. Another factor between studies may be whether specialty hospitals such as cancer or rehabilitation centers were included in the analytic sample. Because these organizations may not have the same community health infrastructure as general community hospitals, we chose to exclude them from our sample, but inclusion of them could convey a different level of compliance across the broader hospital population.

Compliance is generally high, which strengthens the potential for these documents to be used fruitfully in research. However, looking closely at hospitals with missing data, we found that small and less capitalized institutions were less likely to complete this process, as were institutions that serve more vulnerable communities. This is potentially indicative of the role organizational resources play, as we see that hospitals able to draw on the resources of a system have higher rates of compliance. On the other hand, hospitals serving communities with economic stressors are less likely to comply, potentially due to the circumstances of their own resources. Given that less-resourced communities are ones that are likely to be most in need of close assessment and intervention, it is worth considering whether collaborative efforts across public and private sectors could provide greater support to these organizations. Direct support such as grant funding or technical assistance from local, state, or federal government sources have the potential to address gaps in resources. Organizations with fewer resources could implement such support to facilitate partnerships with public health or academic research entities or to incorporate consultants or collaboratives into the assessment process. Professional organizations, such as the Healthcare Financial Management Association, do encourage their member organizations to abide by CHNA policies; while revocation of non-profit status for noncompliance is rare, it does occur and can be financially impactful (12–14).

Going beyond compliance, and based on our experience using these data, we contend that a key issue is the broad latitude that the law grants hospitals in report quality (3, 15, 16). Greater specificity in how reports should be structured would be advantageous from a data analysis perspective. Additionally, factors such as the ability for hospital systems report at a system level rather than individual facility level dilutes the usefulness of some data; a revision to this policy would substantially enrich community-level information. Hospitals also have great latitude in deciding which community health needs to address. For example, findings from our previous studies suggest that hospitals are less willing to invest in upstream social determinants of health, as well as behavioral health needs; and face no repercussions for not responding to priority health needs identified in and by their community (8, 17, 18). For this reason, systematic analyses of the needs that hospitals identify, and those that they choose to address, are necessary. Additionally, considering whether a standardized means of collecting essential information, such as a required form in addition to a hospital's broader report, would be advantageous to public and population health efforts.

A wide range of other factors, from collaboration with public health departments and community-based institutions, to the use of consultants to produce reports, are also useful in understanding how hospitals undertake this process. Community benefit datasets have the potential to answer important questions about the scope of hospitals' population health investments, and whether current policies are sufficient to drive population health improvement. For example, explorations of broad trends in hospitals' community benefit programs have looked specifically at the program's hospitals adopt to address critical health needs such as opioid misuse and social determinants of health, while considering whether community factors (including demographic and economic) shape where hospitals make community benefit investments (11, 17, 18). Another factor worth considering is

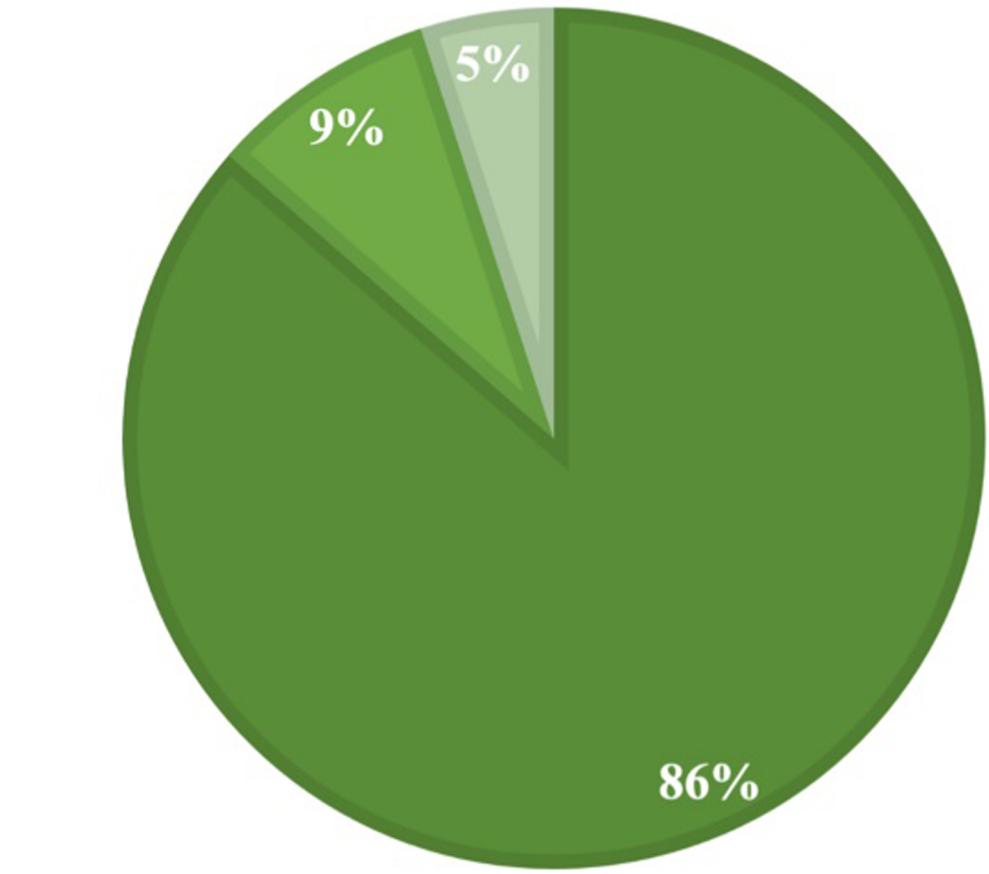


FIGURE 1
Hospital CHNA and IS completion.

state policy regarding community benefit and, specifically, CHNA and IS documents. Hospitals that are not complying with federal policy may not be more likely to adhere to state mandates, unless such mandates come with greater enforcement. However, a more established expectation of public documents within a state may mean a hospital is already in the habit of complying with such expectations (19).

Conclusion

As we continue to analyze the newer round of data, we intend to continue discussions on the role that nonprofit hospitals can play in improving population health and promoting health equity. Although CHNA and IS documents were not created with researchers in mind, they hold considerable potential for understanding hospital decision-making, and for holding nonprofit health care institutions accountable for community health improvement, beyond the clinical services they provide. They also offer insight into new strategies that might better drive community health improvement in collaboration with nonprofit hospitals.

For public health departments across the country that undertake their own CHNA efforts, hospital documents provide additional context and starting points for developing partnerships with health care organizations in their communities. Data gathered from these documents provide opportunities for greater collective efforts in improving population health outcomes. For this precise reason, it is worth exploring how to support those organizations that face challenges in complying with the mandated expectations in order to ensure that the needs of their communities are factored into this collective data. Greater collaboration in these efforts will continue to promote accountability and trust across public and private stakeholders within the health care sector. State health departments have the ability to play a role in incentivizing such collaborations, through the dispersal of resources.

Finally, government bodies establishing these expectations of public and private health facilities should consider the range of mandates under their purview and explore how best to align and standardize timelines and data expectations across those sectors. Private hospitals and public health departments may be more inclined to collaborate on assessment efforts and share resources and information if they have similar goals in common.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

This study was exempt from IRB review because it employs organization-level, publicly available secondary data.

Author contributions

BF led the construction of the dataset and CC led data analysis. All authors contributed to the article and approved the submitted version.

Conflict of interest

The author CC declared that they were an editorial board member of Frontiers, at the time of submission. This had no impact on the peer review process and the final decision.

The remaining author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

1. IRS. General requirements for tax-exemption under section 501(c)(3) | Internal Revenue Service. IRS Charities and Nonprofits - Charitable Hospitals. Available at: https://www.irs.gov/charities-non-profits/charitable-hospitals-general-requirements-for-tax-exemption-under-section-501c3 (Accessed September 7, 2021).

2. Kindig DA, Bakken E. Is hospital "community benefit" charity care? *WMJ*. (2012) 111(5):215–9.

3. IRS. Community health needs assessment for charitable hospital organizations - section 501(r)(3) (2019) Available at: https://www.irs.gov/charities-non-profits/community-health-needs-assessment-for-charitable-hospital-organizations-section-501r3 (Accessed March 8, 2020).

4. Rosenbaum S. Hospital community benefit spending: leaning in on the social determinants of health. *Milbank Q*. (2016) 94(2):251–4. doi: 10.1111/1468-0009.12191

5. Rosenbaum S, Kindig DA, Bao J, Byrnes MK, O'Laughlin C. The value of the nonprofit hospital tax exemption was $24.6 billion in 2011. *Health Aff*. (2017) 34 (7):1225–33. doi: 101377/hlthaff20141424

6. Lopez L, Dhodapkar M, Gross CP. US Nonprofit Hospitals' community health needs assessments and implementation strategies in the era of the patient protection and affordable care act. *JAMA Netw Open*. (2021) 4:e2122237. doi: 10.1001/jamanetworkopen.2021.22237

7. AHA. Annual survey database. American Hospital Association (2005).

8. Franz B, Cronin CE, Singh S. Are nonprofit hospitals addressing the most critical community health needs that they identify in their community health needs assessments? *J Public Health Manag Pract*. (2019) 1:80–7. doi: 10.1097/PHH.0000000000001034

9. US Department of Health and Human Services - Health Resources and Services Administration. Area health resource database. Rockville, MD.

10. Kingery KL. County health rankings & roadmaps. *J Youth Dev*. (2018) 13 (3):259–63. doi: 10.5195/jyd.2018.649

11. Singh S, Kiessling K, Rhodes J. Nonprofit Hospitals' response to the opioid epidemic in urban communities: a content analysis of Hospitals' community health needs assessments and implementation strategies. *J Public Health Manag Pract*. (2020) 26(3):243–51. doi: 10.1097/PHH.0000000000001101

12. Hospital's tax-exempt status revoked for lack of community health needs assessment (2017). Available at: https://www.hfma.org/legal-and-regulatory-compliance/56422/ (Accessed March 3, 2023).

13. Crossley M. Health and taxes: hospitals, community health and the IRS health and taxes: hospitals, community health and the IRS health and taxes: hospitals, community health and the IRS. *Yale J Health Policy Law Ethics*. (2016) 16:51.

14. IRS revokes hospital's tax-exempt status for failure to comply with ACA rule. Becker's Hospital Review (2017) Available at: https://www.beckershospitalreview.com/finance/irs-revokes-hospital-s-tax-exempt-status-for-failure-to-comply-with-aca-rule.html?cmdf=IRS+enforcement+of+CHNA+policy+in+ACA (Accessed May 3, 2023).

15. Alfano-Sobsey E, Ledford SL, Decosimo K, Horney JA. Community health needs assessment in wake county, North Carolina: partnership of public health, hospitals, academia, and other stakeholders. *N C Med J*. (2014) 75(6):376–83. doi: 10.17615/rfqj-1j88

16. Rubin DB, Singh SR, Young GJ. Tax-Exempt hospitals and community benefit: new directions in policy and practice. *Annu Rev Public Health*. (2015) 36:545–57. doi: 10.1146/annurev-publhealth-031914-122357

17. Franz B, Cronin CE, Pagan JA. What strategies are hospitals adopting to address the opioid epidemic? Evidence from a national sample of nonprofit hospitals. *Public Health Rep*. (2021) 136(2):228–38. doi: 10.1177/0033354920968805

18. Chang JE, Franz B, Cronin CE, Lindenfeld Z, Lai AY, Pagán JA. Racial/ethnic disparities in the availability of hospital based opioid use disorder treatment. *J Subst Abuse Treat*. (2022) 138:108719. doi: 10.1016/j.jsat.2022.108719

19. Hospital community benefit | The Hilltop Institute. Available at: https://www.hilltopinstitute.org/our-work/hospital-community-benefit/ (Accessed March 29, 2023).

frontiers | Frontiers in Health Services

TYPE Perspective
PUBLISHED 13 June 2023
DOI 10.3389/frhs.2023.1187306

OPEN ACCESS

EDITED BY
Susan S Garfield,
ey US, United States

REVIEWED BY
Richard Siegrist,
Harvard University, United States
Heidi Steinecker,
Ernst and Young, United States

*CORRESPONDENCE
David C. Rhew
✉ David.Rhew@microsoft.com

RECEIVED 15 March 2023
ACCEPTED 24 May 2023
PUBLISHED 13 June 2023

CITATION
Arnaout A, Oseguera-Arasmou M, Mishra N, Liu BM, Bhattacharya A and Rhew DC (2023) Leveraging technology in public-private partnerships: a model to address public health inequities.
Front. Health Serv. 3:1187306.
doi: 10.3389/frhs.2023.1187306

Leveraging technology in public-private partnerships: a model to address public health inequities

Angel Arnaout[1], Melina Oseguera-Arasmou[1], Nikesh Mishra[1], Bennett M. Liu[1], Ahanjit Bhattacharya[2] and David C. Rhew[3,4]*

[1]School of Medicine, Stanford University, Stanford, CA, United States, [2]Department of Chemistry, Stanford University, Stanford, CA, United States, [3]Healthcare, Microsoft Corporation, Redmond, WA, United States, [4]Division of Primary Care and Population Health, Department of Medicine, Stanford University, Stanford, CA, United States

Long-standing inequities in healthcare access and outcomes exist for underserved populations. Public-private partnerships (PPPs) are where the government and a private entity jointly invest in the provision of public services. Using examples from the Health Equity Consortium (HEC), we describe how technology was used to facilitate collaborations between public and private entities to address health misinformation, reduce vaccine hesitancy, and increase access to primary care services across various underserved communities during the COVID-19 pandemic. We call out four enablers of effective collaboration within the HEC-led PPP model, including: 1. Establishing trust in the population to be served 2. Enabling bidirectional flow of data and information 3. Mutual value creation and 4. Applying analytics and AI to help solve complex problems. Continued evaluation and improvements to the HEC-led PPP model are needed to address post-COVID-19 sustainability.

KEYWORDS

public-private partnership, health inequity, technology, community based organizations, value creation

1. Introduction

The COVID-19 pandemic has highlighted the persistent health inequities that permeate our health system: lack of access to routine care and affordable healthcare insurance, and worsened health outcomes for vulnerable, under-served and under-represented populations in the US (1). Of particular significance during the pandemic was the disproportionate burden of COVID-19 and its consequences in these groups— including higher rates of exposure, transmission, severity of illness, and mortality, accompanied by lower COVID-19 testing and vaccination rates(2).

Traditional initiatives to address health inequities in the US have included (1) raising awareness to the public through education about health equity (3) (2) improving resource provisions to populations most harmed by health disparities (4) and (3) offering cultural competency training to healthcare providers (5). Less commonly explored is the use of public–private partnerships (PPPs) to address health inequities (6), although the COVID-19 pandemic has demonstrated how important it is that the public and private sectors join together during an emergency response (7). PPPs are where the government and a private entity jointly invest in the provision of public services. Through this arrangement, the

private sector takes on significant financial, technical and operational risks while the public entity is held accountable for defined outcomes (8). PPPs are common in nonhealthcare sectors of the economy (such as infrastructure, transportation and energy) and typically seek to capture private sector capital or expertise to improve provision of a public service. In healthcare, the PPP approach can be applied to a wide range of healthcare system needs including construction of facilities, provision of medical equipment or supplies, or delivery of healthcare services across the continuum of care. Of particular interest in this paper is the role of government agencies partnering with private technology companies to facilitate the translation of health data into actionable insights to streamline operations, improve care coordination, and enable greater insights.

The Health Equity Consortium (HEC) (9) is a program of the California Health Medical Reserve Corps (CHMRC) exploring innovative solutions to address the needs of vulnerable populations and public health. Using the PPP model, HEC has formalized connections between community-based organizations (CBOs), local healthcare, public health, healthcare payers, lifescience partners and partners in the technology space (9, 10). HEC's shared-risk, shared-cost model seeks to overcome structural care gaps and break delivery silos while building trust in the populations being served. Operating as an extension of public health and fully engaging healthcare, community-based organizations, and payers, their mission is focused around these four gap areas:

- **Convening Organizations**: Fostering community-level collaboration with PPPs addressing complex, ecosystem-level health equity challenges on multiple fronts.
- **Enabling Data Collaboration:** Providing secure, privacy preserving, trusted technology solutions for community-level health equity data collection, bi-directional sharing, replacing manual with electronic case reporting, analytics, geospatial observations, and surveillance dashboards.
- **Mobilizing Communities:** Building community-level capability to successfully execute and scale health equity initiatives appropriate for each community and aligned with regional initiatives for sustainable impact, improved outcomes while building stronger, more resilient communities.
- **Navigating Social Care:** Helping underserved populations navigate the complexities of fragmented social care programs with consistent messaging and information across multiple touch points.

The HEC is now using this PPP model to expand beyond COVID vaccinations to address primary care challenges such as childhood immunizations, blood pressure, glucose monitoring, and cancer screenings in communities, including in Georgia and Mississippi. The common challenge faced by the public health departments is that health misinformation, hesitancy to care, and inequities in access resulted in health disparities in its vulnerable populations that public health departments could not solve alone. This paper expands on the key enablers of an effective collaboration within a PPP model that aims to address health inequities (Figure 1).

2. Key enablers of success of the PPP model in addressing health equity

2.1. Establishing trust in the population to be served

Health equity is a complex multi-sectoral issue which requires multiple stakeholders to address. Traditional efforts have mostly been focused on healthcare providers and the government (county and state public health agencies). For many under-represented communities, however, language barriers, low literacy

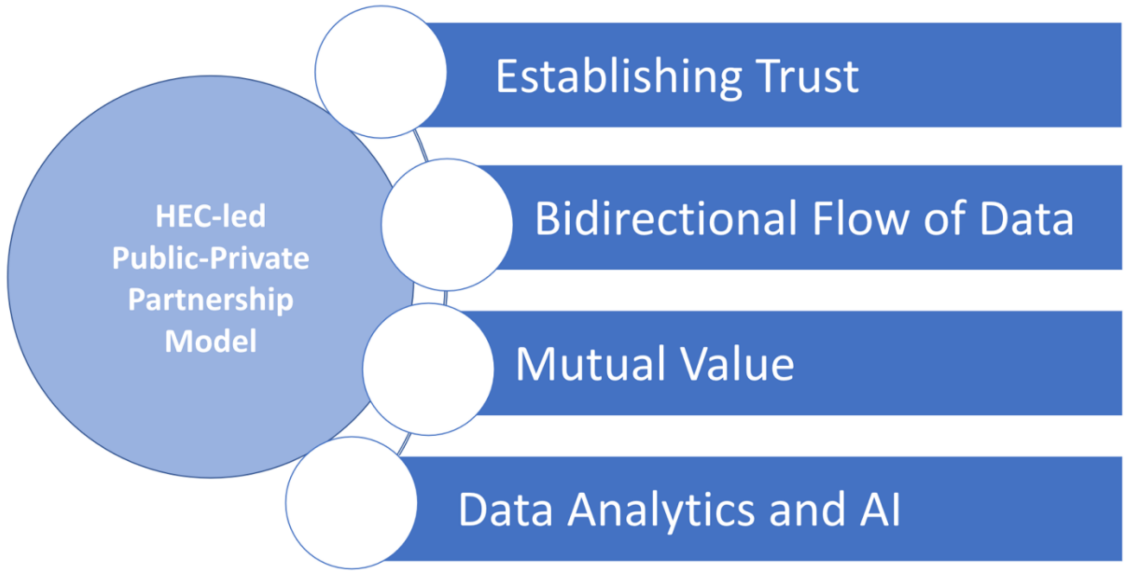


FIGURE 1
Key enablers of success of the public-private partnership model in addressing health inequity.

and health literacy rates, concerns about deportation, cost (including lack of health insurance), lack of access to healthcare providers, and lack of computer and cell phone access are key barriers to achieving health equity. Addressing these challenges requires partnership with those who are attuned to the particular needs of the local population and have a long-standing trusted relationship with the community. CBOs, not-for-profit organizations, faith-based organizations, and non-government organizations who are empowered to engage community members through their established relationships can be trusted, knowledgeable partners. They provide the necessary input, guidance, and active support to engage members of the community

One example of an initiative where collaboration with trusted partners was important was when HEC partnered with Microsoft and local CBOs to improve COVID-19 testing and vaccinations rates in King county, Washington State. There were two pressing issues in this community in early 2021 (10, 11). The first was the need to significantly increase the number of vaccinations delivered to the public, in line with the increasing vaccine supply; and the second was to ensure that the minority and underserved populations who had worse outcomes from COVID-19 (such as the Latino and indigenous people of color (BIPOC), had access to vaccinations. HEC worked with Microsoft to develop a scheduling portal, two apps to track registration and schedule second doses, an automated appointment email system, and a syringe QR code printer and scanner—all at the same time. Using existing infrastructure of local CBOs, HEC brought COVID-19 testing and vaccinations to the local residents, meeting residents where they work or gather, including malls, farms, churches, and other community locations, such as farmer's markets and health hubs. HEC leveraged Microsoft's technology to scale up the volume of vaccinations performed that otherwise would not have been achieved by the CBO alone. Microsoft's QR code solutions allowed patients to move quickly through the site and did not require them to show ID at any point, making the experience more accessible for those with privacy concerns or documentation hurdles such as in the minority and vulnerable populations. The team also configured patient registration systems between two of the top medical centers in King County, Evergreen Health and Overlake Medical Center to seamlessly communicate with one another. Live Power BI dashboards helped medical professionals measure the right amount of vaccine to meet a given day's demand, preventing any waste or shortages. And the dashboards also helped those transporting the vaccine understand when and where to bring the mixtures. In partnership with community organizations such as Centro Cultural Mexicano, Microsoft supported a culturally appropriate pop-up vaccination events for those without reliable transportation or traditional methods of registering for appointments. Going into neighborhoods to build culturally sensitive communication campaigns, Microsoft helped HEC, CBOs and the coalition of healthcare partners achieve greater success in increasing vaccination rates than they otherwise would have achieved alone. Within this initiative, HEC, Microsoft and community stakeholders also assisted individuals and families to navigate local health and social care. From assessing eligibility and enrolling individuals in available social programs (e.g., Medicaid, CHIP, SNAP, WIC, TANF, others), to evaluating an individual's social needs. Connections with appropriate local social care programs and clinical care settings were facilitated.

Employing this collaborative, capacities-centric approach, healthcare and related services were brought to underserved communities where and how they were needed.

2.2. Real time, bidirectional flow and sharing of data

A major challenge faced by traditional collaborative partnerships that address health equity is the lack of infrastructure to collect and share data across health care and social services settings in an accurate and efficient manner. Data sharing, especially if done in real time, allows community stakeholders to learn from each other and collaborate on shared priorities. One of the key enablers for HEC's success in its projects was the technology that enabled bi-directional flow of data between CBOs, public health, and local healthcare organizations. The focus on public health and community-wide data complements prior successful work to share of clinical health information through health information exchange is funded through the American Recovery and Reinvestment Act of 2009 (ARRA) and the Health Information Technology for Economic and Clinical Health (HITECH) Act (12).

Prior to COVID-19, data primarily flowed in one direction from healthcare providers to public health. Data and information back from public health was limited in both timeliness and content. Now, with CBOs joining healthcare and public health in the mix, data and information must flow in both directions with near real-time feedback loops. Operational and workflow improvements depend on timely, accurate data and the integration of insights from analytics. Community-based organizations may not have financial resources to bring to bear, but the data they collect more than make up the difference. An example of this was in another HEC-led PPP project to increase vaccination rates in Solano County, Northern California (10, 11). At that time, Solano County Public Health was concerned that its migrant farmworker population had an increased burden of COVID-19 related deaths, which mirrored its significantly lower rates of vaccination. Partnership with Microsoft and Amazon allowed streamlining of workflows and transitioned from manual fax and PDR file to automated data collection. This was consistently performed across sites of care, and data exchanged through a uniform and secure, privacy preserving manner including the cleansing, mapping, transformation and routing of data to appropriate endpoints based on the principles of Minimum Necessary and Appropriate Disclosure (13). The Solano County Public Health platform supports a full breadth of services, including but not limited to: scheduling, case management, registration, SDOH surveys and the data

management of vaccinations; as well as solving for the challenge of over-reporting or under-reporting of data to and from public health. This technology is able to support pop-up and mobile vaccination clinics for organizations that do not typically have access to Electronic Health Record Systems (EHRs), such as schools, churches, and non-profit organizations. It also ensured that clinical data flowed seamlessly and securely between CBOs, local healthcare organizations, including federally qualified health clinics (FQHCs), public health, and state immunization registries.

2.3. Mutual value creation

A clear understanding and alignment of goals, incentives, skills and resources can create mutual value for all stakeholders involved in a PPP model. The value can result in direct economic gains, such as increasing a provider's capacity to deliver healthcare services, or indirect economic gains, such as with cost savings from improved efficiency of care delivery. HEC delivered measurable value for stakeholders across the health care ecosystem in the following ways:

1. **Healthcare provider.** Reporting requirements from healthcare providers to public health for both infectious and noninfectious diseases vary considerably across states and local territories. Challenges often exist for healthcare providers to adhere to reporting regulations (14), with frequent under-, over- and delayed reporting instances. Over-reporting, such as when an entire medical chart is shared when only a lab result was requested, is a HIPAA privacy violation. The use of real time bidirectional flow of data during the HEC-led PPP initiatives enabled more precise and timely sharing of data between providers and public health in a privacy preserving manner.
2. **Public Health.** Timely collection of public health data from healthcare providers allowed for local, real-time, situational analysis on emerging risk areas and outbreaks during the COVID-19 pandemic. HEC also partnered with ESRI GIS mapping technology (15), to map real time information on COVID-19 and other communicable disease burdens through biosurveillance inputs across various geographies. This allowed public health agencies to plan their prevention and intervention efforts towards the communities that needed it most.
3. **Payer.** Increased vaccination rates, more disease prevention screenings, and improved coordination of care across hard to reach populations increased payer satisfaction ratings and Healthcare Effectiveness Data and Information Set (HEDIS) scores, is a tool used by the majority of U.S. health plans to measure performance on important dimensions of care and service. HEC's community-centric, collaborative approach of convening motivated organizations and providing a community-level environment for collaboration also improved the ability of managed care organizations (MCOs) to identify and enroll people in Medicaid and other state programs.

2.4. Data and AI to solve complex problems

As more data and information become available the potential promise of Analytics and AI can be realized. However, it is critical that compliance, privacy, and trust be maintained while also taking steps to mitigate the impact of data, political, and other bias. Confidential computing and the capability to create and share insights without having to share the actual data need to be available to all. New semi-automated, flexible, dynamic, and auditable agreements need to be in place to be able to adapt to real-world changes. AI analysis of the data can be useful for drawing insights on complex problems, such as mapping patterns of transmission for viral and respiratory pathogens, predicting risk factors for subsequent illnesses and predicting future hospitalizations in a certain geographical area. Furthermore, incorporating geographic information into an organization's dashboard, enables spatial planning for targeting public health prevention and intervention measures. For example, HEC worked with Microsoft and Amazon to leverage cloud technologies to enable public health information discoveries including the identification of gaps in reporting, the need to improve mapping of race and ethnicity to avoid errors in reporting and bias in analytics. Vaccination breakthrough analysis leveraged existing data relationships between testing, screening, vaccination, case and other public health data in near real-time while preserving privacy through patient-linked, de-identified data.

3. Conclusion

Health equity is a complex, multi-sectoral issue which requires participation by multiple stakeholders to address. Using examples from the Health Equity Consortium (HEC), we describe how technology can be used to facilitate collaborations between public and private entities to address health misinformation, reduce vaccine hesitancy, and increase access to social and primary care services across various underserved communities during the COVID-19 pandemic. We call out four enablers of effective collaboration within the HEC-led PPP model, including: 1. Establishing trust in the population to be served 2. Enabling bidirectional flow of data and information 3. Mutual value creation and 4. Applying analytics and AI to help solve complex problems. The PPP process has promise in that it connects stakeholders with each other and those most in need. Limitations of this HEC-led PPP model to address health inequity is its demonstration only during the period of the COVID-19 pandemic. The timing may have been unique supportive of an effective collaboration between private and public entities, in that all stakeholders and the public were highly engaged in a global public health emergency with a strong desire to "return to normal". Continued evaluation and improvements to the HEC-led PPP model are likely needed to sustain the model post pandemic. This may include collaborative efforts with federal agencies such as the US Department of Health and Human Services (HHS) (16) and Centers of Disease Control (CDC) (2), both of whom have a long-standing history of engagements with the private sector, to

help scale this technology driven PPP model across the U.S. to prove its value in addressing health inequities.

Data availability statement

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author/s.

Author contributions

All authors contributed to the article and approved the submitted version.

Acknowledgments

The authors would like to acknowledge the support of Anurag Mairal from the Stanford Byers Center for Biodesign and Yosefa Gilon from the Stanford Center for Innovation in Global Health in the production of this manuscript.

Conflict of interest

Rhew is employed by the Microsoft Corporation. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

1. Khatana SAM, Groeneveld PW. Health disparities and the coronavirus disease 2019 (COVID-19) pandemic in the USA. *J Gen Intern Med*. (2020) 35(8):2431–2. doi: 10.1007/s11606-020-05916-w

2. COVID-19 Vaccine Equity for Racial and Ethnic Minority Groups. https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/vaccine-equity.html. Accessed March 8, 2023.

3. Nundy S, Cooper LA, Mate KS, Reducing disparities in health care, American Medical Association. The quintuple aim for health care improvement: a new imperative to advance health equity. *JAMA*. (2022) 327(6):521–2. doi: 10.1001/jama.2021.25181

4. Brown AF, Ma GX, Miranda J, Eng E, Castille D, Brockie T, et al. Structural interventions to reduce and eliminate health disparities. *Am J Public Health*. (2019) 109(S1):S72–8. doi: 10.2105/AJPH.2018.304844

5. The American Medical Association. Reducing disparities in healthcare. https://www.ama-assn.org/delivering-care/patient-support-advocacy/reducing-disparities-health-care. Accessed March 8, 2023.

6. Mariateresa T, Calabrò A, Morner M. Public–private partnerships in the health care sector: a systematic review of the literature. *Public Manag Rev*. (2015) 17 (2):236–61. doi: 10.1080/14719037.2013.792380

7. Sampat B, Shadlen KC. The COVID-19 innovation system. *Health Aff*. (2021) 40 (3):400–9. doi: 10.1377/hlthaff.2020.02097

8. PwC and UCSF University of California, San Francisco Global Health Sciences Institute. PPPs in healthcare Models, lessons and trends for the future. Healthcare public-private partnerships series, No. 4. https://globalhealthsciences.ucsf.edu/sites/globalhealthsciences.ucsf.edu/files/ppp-report-series-business-model.pdf. Accessed May 12, 2023.

9. The Health Equity Consortium. https://www.healthequityconsortium.org/. Accessed March 2, 2023.

10. Microsoft. Developing public-private partnerships to address health inequities. https://www.microsoft.com/en-us/industry/blog/government/2021/09/21/developing-public-private-partnerships-to-address-health-inequities/. Accessed March 2, 2023.

11. Challenge Seattle. Our work: the COVID-19 response. https://www.challengeseattle.com/covid-19/. Accessed May 12, 2023.

12. Blumenthal D. Launching HITECH. *N Engl J Med*. (2010) 362(5):382–5. doi: 10.1056/NEJMp0912825.

13. US Department of Health and Human Services. Health information privacy: mnimum necessary requirements. https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/minimum-necessary-requirement/index.html. Accessed May 12, 2023.

14. Roush S, Birkhead G, Koo D, Cobb A, Fleming D. Mandatory reporting of diseases and conditions by health care professionals and laboratories. *JAMA*. 1999;282(2):164–70. doi: 10.1001/jama.282.2.164

15. Solutions for Health Equity with GIS - Esri. https://www.esri.com/en-us/industries/health/focus-areas/health-equity. Accessed March 8, 2023.

16. HHS Action Plan to Reduce Racial and Ethnic Health Disparities. https://www.minorityhealth.hhs.gov/assets/pdf/hhs/HHS_Plan_complete.pdf. Accessed March 8, 2023.

frontiers | Frontiers in Public Health

TYPE Opinion
PUBLISHED 14 July 2023
DOI 10.3389/fpubh.2023.1176198

OPEN ACCESS

EDITED BY
Miranda Dally,
University of Colorado, United States

REVIEWED BY
Zandra Levesque,
Education Development Center, United States
Francesca Macaluso,
University of Colorado Anschutz Medical Campus, United States

*CORRESPONDENCE
Vanessa Boland Edouard
✉ vbe@bu.edu

RECEIVED 28 February 2023
ACCEPTED 28 June 2023
PUBLISHED 14 July 2023

CITATION
Edouard VB, Foley M, Gordon A, Garfield S, Dincer L and Nelson KM (2023) Online environments and women's health: an industry-academic public health research partnership to improve health inequities. *Front. Public Health* 11:1176198. doi: 10.3389/fpubh.2023.1176198

Online environments and women's health: an industry-academic public health research partnership to improve health inequities

Vanessa Boland Edouard[1]*, Malu Foley[2], Allegra Gordon[3], Susan Garfield[2], Leyla Dincer[1] and Kimberly M. Nelson[3]

[1]Idea Hub, Boston University School of Public Health, Boston, MA, United States, [2]Ernst & Young LLP, Boston, MA, United States, [3]Department of Community Health Sciences, Boston University School of Public Health, Boston, MA, United States

KEYWORDS

academic-industry partnership, innovation, impact, population health, women's health

Introduction

Academic-industry partnerships in public health are rare and present an opportunity to deepen our understanding of health inequities and improve the health of populations. The COVID-19 pandemic showed that industry and public health are inextricably interlocked: industry decisions and practices impact population health, and public health policies and practices impact how businesses operate. Mutually beneficial partnerships between these entities can help meet a business' core needs by leveraging a company's resources and offering actionable information to improve operations and increase impact. For academics, partnering with industry offers an opportunity to translate rigorous public health research into action, and to reach larger, more diverse audiences. To engage in meaningful academic-industry partnerships that both meet industry needs and academic goals, Boston University School of Public Health (BUSPH) established idea hub, a team of dedicated relationship managers that facilitate partnerships that align with faculty research. This piece describes the systems and processes idea hub developed to ensure these partnerships align with public health values, and provides an example of a successful collaboration with Ernst & Young, LLP (EY). With the right mission alignment, transparency, and open communication, academic-industry partnerships enhance the scholarly pursuits of faculty and advance public health interventions and initiatives through industry partners.

Establishing transparent, mission-aligned partnerships

While academic-industry partnerships are well-established in medicine and engineering, they are relatively rare in public health. This stems from historic mistrust between these two entities: business views public health as overly regulatory, while public health is wary of entities like the alcohol and opioid-producing industries that harm the health of populations. But effective partnerships can benefit both parties (1, 2).

For industry, integrating public health thinking and research has a variety of potential benefits:

- *Meeting core business needs*. The COVID-19 pandemic demonstrated that public health impacts all of us, including business. Integrating public health thinking into strategic plans, products, and operations makes good business sense. Public health thinking can take many forms, including supporting employee health and wellbeing to boost retention and satisfaction, or evaluating a program or service to ensure it is effective and cost-efficient.
- *Impactful, credible research*. Public health research is designed to be practical and actionable. Companies can use the results of these studies to make informed decisions while also associating their brand with a reputable academic institution.
- *Expertise and diversity of thought*. Academics are required to stay current on new research and methods within their fields, bringing discipline-level expertise to research projects and diversity of thought and training to these partnerships.
- *Improving the employee pipeline*. Schools of public health attract diverse, ambitious students who are often involved in research teams during their educational programs. These projects provide a natural pipeline for partner companies to attract a diverse workforce with public health training, including a critical understanding of the ways that systems at all levels of the socioecology perpetuate and reinforce health inequities.

For academics, there are many potential benefits of academic-industry partnerships in public health:

- *Impact*. In academia, we conduct research to have an impact, and to improve the health of populations. Industry partnerships move us beyond the ivory tower of academia to entities that heavily influence how populations live and work.
- *Growth*. Industry partnerships spread public health thinking to the employees at collaborating organizations. Employee engagement has a ripple effect, leading to additional academic-industry partnerships and larger networks for attracting students to public health educational programs.
- *Scale*. Conventional academic research, through traditional funding mechanisms, proposes small, incremental changes and is published and presented largely for academic audiences. Partnerships with industry have the potential for larger impact: sharing rigorous public health research with large, non-public health audiences, integrating public health frameworks and values into how products and services are designed and delivered.
- *Novel areas of research*. Industry partnerships open different funding avenues, allowing public health academics to move beyond the traditional disease-focused perspective of funders like the National Institutes of Health (NIH) to novel and relevant areas of public health. For example, the project highlighted below focuses on how health inequities are and are not represented in women's health websites, an important area of research given that most women use the internet to look up health information, but one that would not typically be funded by NIH or other large funders.
- *Speed*. The typical start-up time for industry-funded partnerships is weeks, compared to 12- to 18-months with traditional funding.
- *Diversity*. Partnering with industry promotes diversity of thought, which spurs innovation and creative solutions thinking. Industry partnerships bring together different mindsets and interdisciplinary training to solve a public health problem.
- *Training the next generation*. These partnerships provide excellent real-world experiences for our students and trainees.

As mentioned earlier, some public health faculty are hesitant to engage with industry partners due to past harms by alcohol, tobacco, and opioid manufacturers, among others. Given this context, academic-industry partnerships at BUSPH go through an extensive vetting process to ensure both the partner organization and the project align with the school's mission and values. We ensure there is operational alignment, particularly around the company's expectations of timeline compared to a traditional academic timeline. idea hub works closely with faculty to ensure the project aligns with their research interests and that their past and future academic pursuits will be protected through formal contracting.

Idea hub at Boston University School of Public Health (BUSPH) facilitates partnerships with for-profit corporations that advance the science of public health while also expanding the impact of population health research. Identifying, vetting, and fostering relationships with industry takes time and effort; idea hub focuses on those relationships so faculty can focus on conducting research. idea hub also funds innovation grants and connects faculty with tech transfer and licensing services.

The BUSPH-EY collaboration: putting the principles into practice

With an understanding that many women seek health information online, Ernst & Young, LLC partnered with BUSPH faculty to conduct a formative study on how women's health information is provided online (the Online Environments and Women's Health project). This project used an iterative in-depth review and coding process to assess whether a sample of women's health websites addressed the needs of marginalized women and determine what opportunities exist in online environments to mitigate health inequities for women across the life course.

Before beginning the project, we evaluated the mission alignment between the two entities. EY's public health group and BUSPH share a mission to advance health equity and improve the health of populations worldwide. EY argues that advancing health equity—increasing opportunities for everyone to live the healthiest life possible, regardless of identity, experience, health, geography, or financial status (3)—makes sense for businesses, while BUSPH focuses on training public health professionals and generating and disseminating new science. Specific to this project, EY was interested in making the business case for supporting women's health. Women are the greatest consumers of online health information (4) and make the majority of healthcare decisions for themselves and their families (5). Having relevant, inclusive online

information for consumers will benefit a business' bottom line. The faculty PIs were aware of these different underlying motivations and received a detailed briefing on EY so they could make an informed decision about engaging in the project.

The first phase of our work was establishing a common understanding, as we brought together a research team with varied backgrounds and perspectives. The BU collaborators do not have experience working in industry, nor do the EY partners have experience working in academia. Two team members, one from each organization, have prior experience with academic-industry collaboration. The lead EY collaborator holds a doctorate in public health. We began with establishing an understanding of health equity (6) and the literature on digital health equity (7, 8). We had a shared understanding of the diversity of the populations of interest. "Women" and "women's health" are not one size fits all. Women's experiences and health information needs vary by socioeconomic position, geography, education, LGBTQ+ identity, disability status, and overall health literacy. As such, women's health-oriented websites are challenged to be accessible and relevant across a wide range of characteristics, to ensure end-users see themselves reflected and able to engage with the site's content. The persistent health inequities experienced by marginalized women highlight the need to consider these women specifically when designing online content to be relevant and valuable.

The BUSPH faculty designed an inclusion/exclusion framework for the study. Since this was a brief, formative study, the search was limited to US-based websites written in English and focused on the health of adolescent girls or women (cisgender and transgender women). By design, the definition of health was broad, but excluded topics that were not explicitly health (e.g., parenting or healthy eating/recipes alone), and the search framework excluded oral health, cosmetics, and elective procedures. We searched for key words related to health equity, including equity/inequity, disparity, diversity, inclusion, and marginalized (3). The first wave of data collection was then conducted by an EY research team, and vetted by the BU faculty. We assessed use of inclusive language, like use of they/them pronouns and narratives offered from different perspectives. We assessed selected indicators of website accessibility, including translation options and alt text for images.

The project brought something new to the field: a practical approach to integrating health equity frameworks into website design, using both a business and public health perspective. We found that the 75 websites evaluated did not prioritize health equity-oriented language, content, or images, and proposed actionable steps for how organizational leadership can move in this direction.

One of the most interesting lessons from the project was how the varied perspectives of the interdisciplinary team made the collaboration stronger, and validated the work such that the results resonated from both a public health and business perspective. This collaboration was successful because our team communicated regularly, transparently, and respectfully. We discussed each logistical detail, from how often to meet and how to organize our meetings to authorship order and project responsibilities. These early, open lines of communications helped overcome one of the greatest challenges in industry-academic projects: different organizational norms around credit and timeline.

In many ways, this was an unusual project. Industry partners do not typically hold doctorates in public health and the research is not typically conducted as a joint venture. At the outset of the project, the team agreed to share data resources after the project was completed, publish jointly, and each team could publish separately should they wish following the project. Understanding the potential for real or perceived conflict of interest, the BUSPH faculty determined a white paper would be the preferred final publication. In most idea hub collaborations, the faculty conduct research independently from the industry partner and faculty publish independent results. In this case, the project was set up to be a full collaboration at all stages from idea generation to design to dissemination. This was possible given the team's shared understanding from the start that the goal of this descriptive study was to be informative to EY business partners and that the strength of the collaboration was in combining the skills and knowledge of the EY team (e.g., writing for a business audience, understanding of how public health goals and business goals align) and BUSPH team (e.g., public health priorities, theory, and methodology).

The final white paper, which is available on the BUSPH idea hub website (https://www.ideahub.org/successes/womenshealthonline/), is intended for business leaders and strategists who would value the shared contributions from industry and academia. EY shared the results with their global client base, a large, diverse audience outside of academic public health. To date, dissemination has been through social media and the research team is brainstorming additional avenues for dissemination. For the BUSPH faculty, the project developed a new research framework for analyzing websites related to women's health. This framework and data produced through this collaboration will be available to the faculty for future research, both in collaboration with EY and independently.

Discussion

Academic-industry partnerships in public health provide many opportunities to enhance our understanding of health inequities and how to improve population health. The Online Environments and Women's Health project was mutually beneficial: EY used this information to educate their global client base on how to improve women's health information by using a health equity lens in website design and communications; BUSPH faculty were afforded the opportunity to conduct novel scholarship in a relevant topic area not typically supported by traditional public health funding streams. The project achieved its goal to build awareness around the varied experiences and health needs of women, and why focusing on marginalized communities should be a priority for business. With the right mission alignment, transparency, and open communication, these partnerships provide the opportunity to enhance the scholarly pursuits of faculty and advance public health through industry partners.

Author contributions

VE produced the first draft. SG, MF, AG, VE, and KN contributed to the design and execution of the cornerstone example

mentioned in this piece, the online environments, and women's health study. All authors contributed to the manuscript revision, and read and approved the submitted version.

Funding

Idea hub at Boston University School of Public Health accepts funding from industry partners. The Women's Health in Online Environments project was funded by Ernst & Young, LLP.

Acknowledgments

Our thanks to Jennifer Conti, Rebeca Almeida, Tulasidhar Kaveri, Natasha Eslami, Isabella James, Ronald Clinton, Julie Nguyen, Arpit Bhardwaj, Radhika, Anshul Ghiloria, and Kevin Lin for their participation in the Women Health and Online Environments project and to Deans Sandro Galea and Michael McClean for their support of idea hub.

Conflict of interest

MF and SG were employed by Ernst & Young, LLP. This study received funding from Ernst & Young, LLC. The funder had the following involvement with the study: data collection and analysis, collaboration on writing and editing of the white paper and this manuscript.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Author disclaimer

The views reflected in this article are the views of the authors and do not necessarily reflect the views of Ernst & Young LLP or other members of the global EY organization.

References

1. Ankrah S, Omar A. Universities-industry collaboration: a systematic review. *Scand J Manag.* (2015) 31:387–408. doi: 10.1016/j.scaman.2015.02.003

2. George Mason University. *A Directory of Leading Companies Partnering with Colleges and Universities for Strategic and Financial Impact. P3 EDU 100 April 3-4.* Fairfax, VA: George Mason University (2018).

3. Braveman PA, Shiriki K, Fielding J, LaVeist T, Borrell LN, Manderscheid R, et al. Health disparities and health equity: the issue is justice. *Am J Public Health.* (2011) 101:S149–55. doi: 10.2105/AJPH.2010.300062

4. Fox S, Duggan M. *Health Online 2013*. Washington, DC: Pew Research Center (2013).

5. Matoff-Stepp S, Applebaum B, Pooler J, Kavanagh E. Women as health care decision-makers: implications for health care coverage in the United States. *J Health Care Poor Underserved.* (2014) 25:1507–13. doi: 10.1353/hpu.2014.0154

6. Bravemen P, Arkin E, Orleans T, Proctor D, Plough A. *What is Health Equity?* Princeton, NJ: Robert Wood Johnson Foundation (2017).

7. Lyles CR, Wachter RM, Sarakar U. Focusing on digital health equity. *JAMA*. (2021) 326:1795–6. doi: 10.1001/jama.2021.18459

8. van Kessel R, Wong BLH, Clemens T, Brand H. Digital health literacy as a super determinant of health: more than simply a sum of its parts. *Internet Interv*. (2022) 27:100500. doi: 10.1016/j.invent.2022.100500

frontiers | Frontiers in Health Services

TYPE Brief Research Report
PUBLISHED 25 July 2023
DOI 10.3389/frhs.2023.1187229

OPEN ACCESS

EDITED BY
Laura Housman,
Boston University, United States

REVIEWED BY
Stacey Gilbert,
Previse Dx, United States
Karen White,
Boston University, United States

*CORRESPONDENCE
Susan Garfield
✉ susan.garfield@ey.com

†These authors have contributed equally to this work and share first authorship

RECEIVED 15 March 2023
ACCEPTED 13 June 2023
PUBLISHED 25 July 2023

CITATION
Garfield S, Almeida R, Donaldson K and Eslami N (2023) Enhancing corporate readiness for and resilience to future public health threats, development and deployment of the public health readiness and resilience (PHRR) assessment tool.
Front. Health Serv. 3:1187229.
doi: 10.3389/frhs.2023.1187229

Enhancing corporate readiness for and resilience to future public health threats, development and deployment of the public health readiness and resilience (PHRR) assessment tool

Susan Garfield[1*†], Rebeca Almeida[2†], Kira Donaldson[3†] and Natasha Eslami[4†]

[1]Global Markets/Client Service, Ernst & Young LLP, Cambridge, MA, United States, [2]Transformation Architecture, Ernst & Young LLP, New York, NY, United States, [3]Transformation Architecture, Ernst & Young LLP, Los Angeles, CA, United States, [4]Transformation Architecture, Ernst & Young LLP, Cambridge, MA, United States

As the world suffered through the COVID-19 pandemic, it is increasingly clear that the health of populations is foundational to a high-functioning economy, corporate well-being, and a core driver of social justice. Thus, companies need to understand how to become more resilient to current and future threats. This study (1) explored dimensions of resilience from a public health risk-specific lens and reviewed existing evaluation tools and frameworks to develop a methodology and framework (Public Health Readiness and Resilience—PHRR Assessment Tool) for organizations; and (2) leveraged the framework to evaluate a sample of large corporations to validate the insights the tool can provide, confirm functionality, and evaluate the ability to leverage publicly available vs. propriety data to complete the assessment. We conducted a non-exhaustive search for relevant indices using key word searches and cascade sampling. For the initial review of indices (n = 24), the team evaluated each document based on predefined criteria. Gaps identified in the available indices informed the development of the PHRR assessment tool. The tool was then used to examine real-world companies (n = 22) from eight different industries. Findings from the PHRR tool illustrated variation in readiness and resilience as well as the availability of data. Approximately half of the companies analyzed (n = 11) indicated high levels of potential resilience and readiness with significant data available. Leveraging the PHRR Assessment Tool can inform investments and cross-sector partnerships that enhance companies' readiness and resilience to a variety of public health threats. Additional research is needed to further validate this tool.

KEYWORDS

business assessment, public health resilience, public health readiness, corporate assessment, public health framework, corporate resilience, resilience, corporate

Introduction

Corporate public health readiness and resilience considerations

The coronavirus 2019 (COVID-19) pandemic underscored the impact that public health incidents have across individual, community, and business realms (1). For the first time, all

corporations[1] collectively experienced the significant impact that a major public health event can have to their businesses, their people, and the communities in which they operate. Executives had to manage health and safety in the workplace, deal with vacillating demand for goods and services, and manage the disruption of supply chains, all while trying to interpret fast-changing science and combat dis- and misinformation during a period of extremely high uncertainty. Additionally, many companies were forced to reevaluate their physical buildings and real estate portfolio using a "healthy building" lens for the first time (2). The pandemic called attention to how businesses are impacted by public health events and are essential actors in both community response and their employees' experiences.

The drastic economic impact that the pandemic had on businesses and communities raised questions about the potential effects of future public health events on businesses and in what ways companies can prepare and respond in the future (3). Several researchers, NGOs, governments, and companies have conducted research into public health readiness and resilience to determine best practices (4, 5). Public health readiness is an essential requirement for any company to prepare for possible public health crises or risks proactively and effectively, to minimize their impact, and to ensure rapid and comprehensive responses to protect the company's workforce, customers, suppliers, and communities. In turn, public health resilience is the capacity to adapt and respond once unforeseen public health challenges, emergencies, or disasters arise while ensuring uninterrupted operations, protecting the safety of employees and customers, and supporting the welfare of the community swiftly and successfully (6, 7). Together, readiness and resilience enable organizations to better prepare for and respond to a myriad of threats, decreasing the potential negative impact and accelerating response time. Traditional resilience and disaster response literature has focused mainly on natural disasters and epidemics (8). This manuscript, however, focuses on resilience and readiness in the context of public health, answering the question: what does it mean for companies to be resilient and ready in this context and how can an organization effectively measure the degree to which they are prepared? While the coronavirus identified in 2019 was an infectious, air-born, respiratory disease, future public health threats could stem from a variety of causes: climate, food or agricultural, other infectious agents, impacted water supply, or a combination of sources. The breadth, depth, and diversity of potential causes lends to the notion that the best crisis response is largely dependent on the nature of the threat.

Resilience is a critical success factor for both public health and businesses when navigating uncertainties, as it requires preparedness and agility when responding to events (9). Public health readiness and resilience, and the associated measures of an organization's relative maturity in these domains will depend on the nature of each threat. Some organizations will be well-positioned for specific threats and poorly prepared for others. However, most companies do not routinely self-evaluate their readiness for and likely resilience to a wide array of potential public health threats. There is a need for a standardized self-evaluation framework, comprised of dimensions that align with potential response and readiness to a broad range of public health risks (that are inclusive of and expansive beyond disaster recovery planning), which is not only relevant to but also actionable by corporate decision-makers.

To this end, we first researched, assessed, and defined dimensions of resilience for businesses through a public health lens by building on existing frameworks where possible and creating new dimensions to fill gaps where needed. We then explored dimensions of resilience from a public health risk-specific lens and reviewed existing evaluation tools and frameworks to develop a methodology and framework for organizations to evaluate themselves against. This includes critical dimensions of public health readiness and the associated criteria and metrics to accurately assess an organization's likely resilience moving forward. We then leveraged the framework to evaluate a sample of large corporations to assess how the tool functioned, the insights it could provide, and the ability to leverage publicly available vs. proprietary data to complete the assessment. In this paper, we will present the resulting assessment tool, how it was developed, and key initial findings from real-world companies.

PART I

Method

Defining public health resilience from a corporate perspective and developing the PHRR assessment tool

First, we performed an extensive literature review related to the topic of resilience, how it was being defined and measured in different settings, and if any specific research was available related to public health resilience. This informed the working definition of resilience explored in stakeholder workshops and then leveraged during the rest of the tool development and testing. We then conducted an extensive search for relevant publicly available resilience tools and frameworks related to measuring levels of employee health & well-being, place-based health indicators, and preparedness. We identified and analyzed 24 existing resilience and public health readiness tools to assess the current landscape, including best practices and components that could be further built out. Each tool was assessed based on its description, purpose, category, input(s) and output(s), accessibility, and scalability. Tools were also categorized by five different elements: (1) relevance, (2) methodology, (3) ease of use, (4) output applicability, and (5) input dimensions.[2]

[1]A for-profit company which has been incorporated through the legal process of creating an entity or corporation (1).

[2]*Disclaimer: the tools included were not evaluated based on merit in any way and were only assessed based on whether or not they addressed the*

Our team then conducted two online workshops between October and November of 2021 to capture deeper qualitative insights from thought leaders related to resilience, tools, evaluation dimensions, and unmet market needs. Workshop attendees were selected based on their academic and professional expertise in the field of public health, policy, business, or resilience and preparedness. Both workshops had the same attendees and were manually transcribed by research assistants and later summarized. The first workshop aligned the purpose and goals of a public health resilience tool or framework and defined business resilience from a public health perspective. Participants also reviewed existing evaluation frameworks to understand existing best practices and gaps. This included exploring questions like: What does it mean to be resilient in public health crises now and in the future? How can businesses be better prepared for future health impacts on their business? What is a business' responsibility in preparing and responding to health-related crises? What does it mean for a business or company to be resilient from a public health perspective?

The second workshop focused on validating relevant public health resilience dimensions. During the session, attendees were encouraged to consider the public health rationale [i.e., why is this (dimension) important for public health?] and the business rationale [i.e., why is this (dimension) important for businesses?] for each suggested dimension to ensure relevance.

We then conducted a second literature review focused on = resilience dimensions identified in the first stage of research. These dimensions were refined and validated during the second workshop by discussing their validity and identifying multiple criteria that could be used to measure each dimension. The metrics were then tested with several business leaders to determine applicability and relevance. Once metrics were identified, we then reviewed data source availability for each one to determine what data was publicly available, what data was available for purchase, and what data would require primary research with companies to capture. Finally, after reviewing each dimension and metric used within available assessment tools and leveraging expert input on relevance to corporate public health resilience assessment, six dimensions were identified for inclusion in the draft Public Health Readiness and Resilience (PHRR) assessment tool.

Results

Learnings from existing evaluation tools

The 24 existing tools reviewed emphasized different aspects of public health. Examples of focus areas include organizational support(s), leadership, and company culture; strategic processes for planning public health agendas and associated impacts to the organization; specific health programs; company policies that consider employee and organizational-level public health impact as well as public health-related interactions with external partners; integration with the local public sector, and local county health metrics to understand and assess the health of the communities they work in and from where their employees reside.

purpose of assessing public health resilience in businesses. (Please see Table 1 for the evaluated dimensions and their definitions).

TABLE 1 Evaluation dimensions for landscape assessment.

Evaluation Dimensions	Definition
Relevance	The tool has components that holistically consider public health resilience through a business lens
Methodology	The tool was created using a clear, repeatable, and objective methodology
Ease of use	The tool can be easily accessed and/or used
Output applicability	The tool's outputs are easily interpretable, and can drive public health resilience in business
Input dimensions	The tool's input dimensions were relevant to public health resilience in business

However, none of the tools included all five elements (i.e., relevance, methodology, ease of use, output applicability, and input dimensions) that were identified as critical to a public health resilience-oriented framework. The majority did not incorporate a mechanism to conduct comparisons across companies or include considerations for interactions between companies and their surrounding communities. Additionally, none of the tools assessed evaluated multiple components of a company's public health resilience, such that the tool could assess the relationships between business, community, and individual employee impacts and provide a comprehensive understanding of corporate public health resilience.

Overall, the evaluated tools are valuable for measuring specific aspects of public health resilience, but none provided a complete assessment. Each contain certain elements of what businesses need to assess to understand their potential preparedness for and resilience to adverse public health events but does not provide a comprehensive or complete view. Additionally, there was a gap in the focus on companies vs. communities. Most tools assessed were developed for the purposes of community and government use rather than evaluating businesses as a comprehensive, interlocking unit. Results from the landscape assessment and thought leader workshops support the need for a novel and actionable assessment framework that leverages objective and comparable metrics relevant to current and future public health crises in a corporate setting.

Building the public health readiness and resilience assessment tool

Six distinct dimensions emerged as priorities for a novel PHRR assessment tool. These include (1) Community Connectivity, (2) Leadership & Trust, (3) Employee Health & Well-being, (4) Operations, (5) Physical Environment, and (6) Internal Analytics & Assessment (see Table 2). In building the assessment tool, each dimension was further contextualized through specific subservient-related metrics that roll up into a

TABLE 2 Proposed PHRR tool dimensions.

Dimension	Key Questions	Metrics	Scoring
Community Connectivity	• How are you connected or engaged to the communities you work or serve? • Does your organization's practices and policies consider or integrate with the surrounding community?	1. Policy for community involvement	LMH
		2. Community lending and investments	LMH
		3. Ability to share information within local community	
		4. Public health monitoring and evaluation in local community	LMH
		5. Number of current community partnerships	LMH
Leadership & Trust	• Are your leaders set up to understand when public health risks are emerging and how to best respond in various scenarios? • Do you have a single leader accountable to drive response during public health crisis? • Do what degree do employees trust and engage with your company?	1. Employee satisfaction rate	LMH
		2. Average employee length of service	LMH
		3. Turnover rate	LMH
		4. Training related to health or DEI	Y/N
		5. Availability of technology trainings	LMH
		6. Funding approval pathways during emergency	Y/N
		7. Routine reviews by senior leadership of various public health risk metrics	Y/N
		8. Specified leader in charge of public health risk assessment and response	Y/N
		9. Succession plan for management	Y/N
Employee Health & Well-being	• Are you investing in your employees' health and well-being? What programs and policies do you have in place? • Do your employees feel supported? (access to care, social networks)	1. Transparency about and awareness of available resources	LMH
		2. Occupational diseases rate	LMH
		3. Employee fatalities	LMH
		4. Flexible working hours	Y/N
		5. Day care services	Y/N
		6. Policy for employee health & safety	Y/N
		7. Policy for supply chain health & safety	Y/N
		8. Employees health & safety team	Y/N
		9. Health and safety training	Y/N
		10. Employee health & safety training hours	LMH
		11. Supply chain health & safety training	Y/N
		12. Supply chain health & safety improvements	Y/N
		13. Employees health & safety management systems	Y/N
		14. HSMS certified percentage	LMH
		15. Established new wellness programs or partnership with digital wellness platforms	LMH
		16. Participation in health and wellness programs	LMH
Operations	• Are you adapting to new tech and workplace cultural preferences? • How are you investing in crisis preparedness? • Are you preparing for better response and building agility to threats?	1. Crisis management systems	Y/N
		2. Timeliness to adapt to new public health context	LMH
		3. Response plan for adverse public health events	Y/N
		4. Cybersecurity sophistication	LMH
		5. Risk analytics automation	LMH
		6. Review cadence of emergency response plans	LMH
		7. Policy for customer health & safety	Y/N
		8. Food security assessment	Y/N
Physical Environment	• Are you actively monitoring air and water quality in all your buildings? • Is your physical infrastructure up to date and prepared for anticipated threats?	1. Environment risk assessment	LMH
		2. Monitoring of air quality	Y/N
		3. Monitoring of community or external risks (i.e., crime)	Y/N
		4. Evaluation of worksite safety	LMH
		5. Clean and safe water supply	Y/N
Internal Analytics & Assessments	• Do you track and monitor your health metrics? • What are some "improved resilience" outcomes?	1. Recent employee health & safety controversies	LMH
		2. Recent customer health & safety controversies	LMH
		3. Recent public health controversies	LMH
		4. Broad adoption of novel technologies	LMH
		5. COVID-19 dedicated section or report	Y/N

Y/N, Yes or No binary scoring; LMH, low, medium, and high scalar scoring.

collective view, and together create the composite assessment of organizational readiness and estimated resilience. Dimension definitions and assessment criteria are detailed below:

1) **Community Connectivity:** The degree to which an organization has active engagement and commitment to the local community's health and societal resilience.

- Example of **Community Connectivity**: Continued engagement with community leaders allows for the identification of local priorities, relationship building, and bidirectional information flows that can be leveraged during times of crisis.

2) **Leadership & Trust:** The degree to which leadership is set up to prepare for, monitor, and respond to Public Health future scenarios, and the level of trust and engagement employees have with the company.
   - Example of **Leadership & Trust:** A company has well-established communication cadence with employees and has developed a high level of trust related to routine issues as well as communicating challenges.
3) **Employee Health & Well-being**: The degree to which employers ensure appropriate access and coverage to health benefits (e.g., medical benefits, paid leave policies, wellness programs, etc.) and prioritize worker health & well-being.
   - Example of **Employee Health & Well-being:** Company has embedded health and wellness into core HR activities and has a team actively deploying health and wellness initiatives among employees, actively surveying employees about their health and wellness needs, and evaluating the impact of deployed programs.
4) **Operations:** The degree to which an organization ensures that operational procedures (e.g., supply chain, IT) are repeatable and scalable.
   - Example of **Operations:** The company has a health risk monitoring system that provides ongoing insights to the operations team that conducts planning for a variety of health risk-based scenarios. They evaluate the impact on vital business functions, supply chains, services, and people. They establish an operational response to a variety of scenarios and potential challenges.
5) **Physical Environment:** The degree to which an organization focuses on the environmental and climate impact (i.e., physical environment resilience to climate threats such as sea-level rise, floods, heat, wildfire) of business activities as it pertains to health impacts, as well as the indoor environment (i.e., healthy buildings) and carbon impacts (e.g., fossil fuel consumption vs. electric usage).
   - Example of **Physical Environment:** The company reviews its physical workspaces and physical plants from a health and safety standpoint, considering both the impact of environmental or climate risks and a variety of health-related risks like air or food-borne pathogens. Specifically, they might invest in resilience from weather and climate-related impacts, as well as air quality, water, sanitation, and waste management.
6) **Internal Analytics & Assessment:** The degree to which an organization has the capability to use and actively leverage, internal and external assessments and data to drive decision-making and quantify their PHR impact.
   - Example of **Internal Analytics & Assessments:** The company operationalizes corporate data to generate forecasting, foresight, predictions, or detection of adverse events, potential system vulnerabilities, uncertainties, deteriorations, etc., for constant awareness of and preparation for current public health events.

The PHRR assessment tool is comprised of 48 metrics that map to these six dimensions or priority areas. The metrics are specific measures that fall within one of the six dimensions.

PART II

Method

Leveraging the PHRR tool to assess real-world companies

Twenty-two companies were selected based on size (all companies had at least 4,500 employees, and the majority had 10,000+ employees) and representation across eight sectors to evaluate the applicability of the PHRR assessment tool in the real world. Companies assessed were present in multiple US states and/or other countries. The eight sectors and associated number of companies within each sector were as follows: Health sciences and wellness ($n = 6$), Consumer discretionary ($n = 5$), Financial services ($n = 4$), Energy ($n = 2$), Government and private sector ($n = 2$), Information technology ($n = 1$), Auto manufacturing ($n = 1$), and Restaurant ($n = 1$). Multi-sector representation was important due to the unique ways in which companies can be impacted by different threats. For example, while all sectors were impacted by the COVID-19 pandemic, in the early days of the crisis, the travel and restaurant industries were disproportionately impacted as compared with other industries like information technology and virtual entertainment (10). The key impacted industries of a future public health event will likely change depending on the nature and manifestation of the threat.

Once selected, each company was then assessed against the PHRR tool using publicly available data from ESG reports (i.e., disclosure of environmental, social, and corporate governance data), company websites, and other external research. The degree to which information was available for each metric determined its Metric Availability Score (MAS), with the actual metric-specific result rolling up to the Dimension Resilience Score (DRS) for each of the six dimensions. The DRS is calculated as the sum of all scores for available metrics in a dimension divided by the highest possible score in each dimension. The MAS provided the context of where further investigation or primary research with the company was needed to get higher reliability for the DRS. Both the MAS and the DRS were scored from 1 to 3, with a score of 1 indicating no fulfillment of criteria, a score of 2 indicating fulfillment of some criteria but not all criteria, and a score of 3 indicating satisfactory fulfillment of criteria. Companies also received one Total Metric Availability Score (TMAS) and one Total Company Resilience Score (TCRS). The TMAS is the ratio of a company's available metrics to all possible metrics ($n = 48$). While the TCRS is calculated as the

sum of all scores of available metrics divided by the total highest possible score of available metrics (see Table 3).

Results

Findings from real-world companies

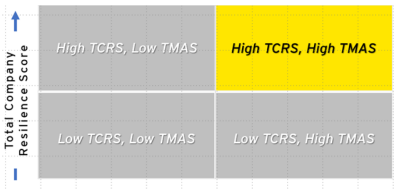
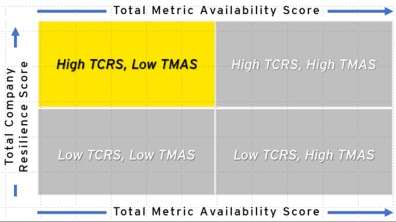
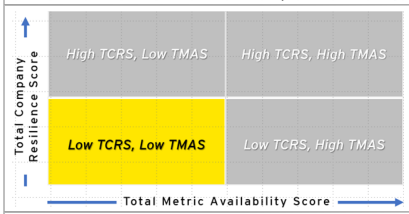
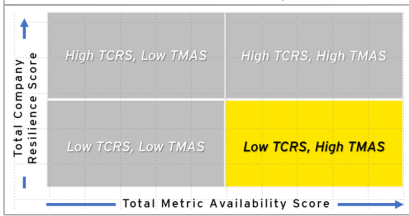
After assessing 22 companies, variation in readiness and resilience, as well as the availability of data, was observed. Companies were mapped into four quadrants based on performance in both TCRS and TMAS scores (see Tables 3, 4). Half of the companies analyzed ($n = 11$) scored High TCRS/High TMAS, indicating high levels of potential resilience and readiness with significant data available. High TCRS/Low TMAS companies ($n = 8$) had high resilience and readiness scores; however, they had low data transparency, indicating the need for additional follow-up evaluation to validate.

Across companies, the dimensions with the least metric availability were Leadership & Trust and Operations. Eight out of 22 companies scored below 50% on Leadership and Trust, and 10 out of 22 companies scored at or below 50% on Operations, indicating poor metric availability in the Leadership and Trust and Operations dimensions. The four companies in the health sciences and wellness sector averaged 91% in their TCRS, indicating strong company resilience

TABLE 3 Key process definitions.

Terminology	Definition
Dimension	An umbrella category containing grouped metrics. There are six dimensions in the PHRR assessment tool.
Metric	A measure of specific public health readiness and resilience criteria. There are 48 total metrics in the PHRR assessment tool.
Metric Availability Score (MAS)	The number of PHRR metrics that can be scored based on a company's publicly available data, divided by the total number of metrics in a given dimension.
Total Metric Availability Score (TMAS)	The sum of a company's total available metrics to be scored divided by the total number of metrics in the PHRR assessment tool (e.g., 48 total metrics).
Dimension Resilience Score (DRS)	The sum of a company's metric scores in a given dimension, divided by the highest possible score in a given dimension.
Total Dimension Resilience Score (TDRS)	The sum of a company's total dimension resilience scores divided by the highest possible resilience score for all metrics in the PHRR assessment tool (e.g., 144 total).

TABLE 4 Highest number of assessed companies with high and low total company resilience scores and high metric availability scores.

	Quadrant	Companies (*n*)	Description
	High TCRS, high TMAS *least improvement needed	11	Companies with high levels of public health resilience in all dimensions and transparency of information, meaning that information is publicly available. They are leaders in employee health and well-being, building safety, technological advances, and positive community impact. They tend to be companies in the health and wellness sector.
	High TCRS, low TMAS	8	Companies with low transparency of information but high public health resilience. They only reveal public health information that displays achievement of key public health metrics, such as employee health and happiness and community engagement. Many of their metrics, however, did not have publicly available information online. are resilient in every dimension, especially among the employee health and well-being metrics.
	Low TCRS, low TMAS *most improvement needed	3	Companies with the lowest levels of transparency and resilience, indicate that public health information is difficult to procure, and the available information indicates less than satisfactory levels of employee health and well-being, worksite safety, technological advances, and positive community impact.
	Low TCRS, high TMAS	0	Companies with low levels of resilience. As expected, we did not identify any companies that met the criteria of this quadrant. Further research is necessary to determine whether the lack of resilience is due to a lack of effort and investment or simply due to unavailable data.

among health sciences and wellness companies. Across all companies, the Community Connectivity dimension had the highest scores in terms of both TMAS and TCRS displaying high company involvement with local communities, willingness to donate money, and pride in company involvement in social causes. Additionally, the companies in the government and private sector had low MAS, highlighting the need for more transparency of government public health information. The majority of companies had employee health and safety policies, employee wellness programs, and employee benefits.

Companies in the health and life sciences sectors are most likely to be public health resilient; however, because sample sizes are small in other sectors, more work is needed to fully understand the relative readiness and resilience of the broader market. Across all companies assessed there is significant room to improve public health resilience though actual corporate preparedness may be better than assessed due to a lack of publicly available information.

Discussion

Application and scaling of the PHRR assessment tool

The lack of comprehensive readiness and resilience assessment tools for public health threats underscores the importance of developing a novel assessment tool (i.e., PHRR assessment tool) focused on helping organizations understand where to focus efforts to become more resilient to current and future public health threats.

The goal of the PHRR assessment tool is to help businesses determine their baseline level of public health readiness and likely resilience to a variety of potential health threats based on their existing characteristics; identify vulnerabilities and opportunities to enhance; and sustain resilience through further public health focus, investment, or partnership. The PHRR assessment tool is intended to guide industry leaders to (1) Assess and improve how well their organization, as a whole, can respond to and withstand future public health crises, (2) Identify strengths and areas of improvement, with the goal of it becoming a regular assessment and monitoring tool, (3) Allow businesses to compare how they are doing with others, and (4) Share common gaps and best practices to ultimately create more uniform standards for employee well-being, community health, and enhanced productivity. This framework could also help organizations determine where to focus future investments and how to consider which ones will position them to be more resilient to current and future public health threats.

By piloting the tool with publicly available data from 22 companies within and across sectors, we began the process of validating the tool's effectiveness and value. More work is needed to continue to validate it across a broader variety of organizations and through the expanded use of both proprietary and publicly available data. The preliminary results provide actionable areas for further evaluation, and directional insights to help businesses determine where there are key gaps and actionable opportunities to enhance and sustain public health resilience through investment, focus or partnership. We envision that the tool will reside within the risk functional area, but assessment findings should be shared cross-functionally.

For the tool to be scalable, further work will be required to validate the metrics embedded in the PHRR assessment tool. Additionally, the tool could be considered from a sector-specific lens leveraging metric weighting based on the way that different factors impact companies in different sectors. This could allow each company to take a sector-specific view of its public health resilience. For example, companies in the hospitality industry would have greater weight given to employee readiness and ability to congregate freely, while the energy sector might weigh transportation, supply chain, and operational continuity higher.

Nonetheless, findings are subject to limitations, such as the fact that the professionals' personal experiences and biases may influence the information they shared with the research team, thereby limiting the findings.

Conclusion

The COVID-19 pandemic has sharpened businesses' focus on global threats, and resilience has become an increasingly critical concept for business to deliver economic prosperity as well as long-term community health. The ability to evaluate and measure an organization's resilience potential against a host of future public health-related risks and events is not just valuable but essential in this context. Elements of public health resilience seen in companies that have and continue to adapt to the evolving state of the coronavirus pandemic that started in 2019, such as digital communication capabilities, mature analytics, and integrated systems supporting employee health & well-being, may have been posed as forward-thinking corporate characteristics prior to the shelter-in-place policies introduced in March 2020. Today, they serve as the baseline factors for businesses that will resiliently face the public health crises of the future.

The pandemic revealed that public health and business health are inextricably linked. Yet many organizations have not incorporated public health into strategic and core business functions. Further, existing frameworks for how businesses could think about and prepare for future public health threats did not include a holistic assessment tool. Our analysis identified six key dimensions of Public Health Readiness and Resilience and associated metrics that businesses could consider for understanding and assessing public health resilience and mitigating associated business impacts from current and future threats. When companies leverage the assessment tool, findings could support investments or cross-sector collaborations to build public health and especially community resilience.

Data availability statement

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

Ethics statement

Ethical review and approval was not required for this study in accordance with the local legislation and institutional requirements.

Author contributions

All authors contributed to the article and approved the submitted version.

Acknowledgments

We would like to acknowledge Joseph Allen, Sandra Dedesko, and Shivani Parikh for their thoughtful collaboration. We would like to thank our intern Sara Mar for contributing to background research. Additionally, we would like to provide our sincere gratitude to Sylvie Babat and Oliver Galea for their research support, help with analyses, and overall enthusiasm and professionalism while finalizing this article.

Conflict of interest

All authors were employed by Ernst & Young LLP.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Author disclaimer

The views reflected in this article are the views of the author and do not necessarily reflect the views of the global EY organization or its member firms.

References

1. Cornell Law School — Legal Information Institute. Incorporate. (2022). Available at: https://www.law.cornell.edu/wex/incorporate (Accessed 30 May, 2023).

2. Allen JG, Macomber JD. Healthy Buildings. s.l.:s.n. Cambridge, MA, United States: Harvard University Press (2022).

3. Sherman A. Five charts that show how Covid-19 stopped the U.S. economy in its tracks. CNBC (2021). Available at: https://www.cnbc.com/2021/03/11/covid-19-economic-impact-five-charts-that-tell-the-story.html (Accessed January 15, 2022).

4. Khan Y, O'Sullivan T, Brown A, Tracey S, Gibson J, Généreux M, et al. Public health emergency preparedness: a framework to promote resilience. *BMC Public Health*. (2018) 18(1):1344. doi: 10.1186/s12889-018-6250-7

5. CDC. Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health. (2021). Available at: https://www.cdc.gov/orr/readiness/capabilities/index.htm (Accessed January 15, 2022).

6. United Nations Office for Disaster Risk Reduction (UNDRR). Increasing Global Resilience to Systemic Risk: Emerging Lessons from COVID-19 Pandemic. (2021). s.l.: s.n.

7. Basnayake H, Mack C, Tong I. COVID-19 business continuity plan. (2020). Available at: https://www.ey.com/en_us/strategy-transactions/companies-can-reshape-results-and-plan-for-covid-19-recovery (Accessed January 15, 2022).

8. Mayer B. A review of the literature on community resilience and disaster recovery. *Curr Environ Health Rep*. (2019) 6(3):167–73. doi: 10.1007/s40572-019-00239-3

9. Dekker T, Doe C, Glindemann C. Enterprise Resiliency: Nine Areas of Focus for Covid-19 Crisis Management. (2020). Available at: https://www.ey.com/en_us/covid-19/enterprise-resiliency-nine-areas-of-focus-for-covid-19-crisis-management (Accessed January 15, 2022).

10. Gursoy D, Chi GC. Effects of COVID-19 pandemic on hospitality industry: review of the current situations and a research agenda. *J Hosp Mark Manag*. (2020) 29:527–9. doi: 10.1080/19368623.2020.1788231

frontiers | Frontiers in Health Services

TYPE Brief Research Report
PUBLISHED 01 September 2023
DOI 10.3389/frhs.2023.1166034

OPEN ACCESS

EDITED BY
Joris Van De Klundert,
Adolfo Ibáñez University, Chile

REVIEWED BY
Leighton Ku,
George Washington University, United States
Zeinab Gholamnia Shirvani,
Babol University of Medical Sciences, Iran

*CORRESPONDENCE
Amy Samantha White
amy.white2@lehman.cuny.edu

RECEIVED 16 February 2023
ACCEPTED 14 August 2023
PUBLISHED 01 September 2023

CITATION
White AS (2023) Transitioning from Medicaid to private health insurance: informing public and private sector outreach.
Front. Health Serv. 3:1166034.
doi: 10.3389/frhs.2023.1166034

Transitioning from Medicaid to private health insurance: informing public and private sector outreach

Amy Samantha White*

Department of Health Equity, Administration, and Technology, School of Health Sciences, Human Services, and Nursing, Lehman College, Bronx, NY, United States

This study explored the lived experiences of transitioning from Medicaid to private health insurance upon college graduation. Fifteen recent graduates of an urban, commuter, public college in the Mid-Atlantic were interviewed via Zoom® to understand what they regard as crucial aspects of the transition experience, especially during the COVID pandemic. The subjects all identified as being members of a minority racial or ethnic group, the average age was 33 years (SD = 10.96), and all but one interview subject majored in the health sciences. Every recent graduate reported experiencing difficulty in the transition. Subjects felt unprepared for the transition, alone, and without support. "Copays" was the most common response to questions, frequently said with arms in the air for emphasis, as if the word "copay" summarized all of the lack of preparation, difficulty, and expense of the healthcare system after previously receiving Medicaid (i.e., free healthcare). The findings inform how the private sector should on-board new college graduates. There is a need for Medicaid case officers to better prepare clients for the transition and for human resources personnel in the private sector to sufficiently explain how private health insurance works.

KEYWORDS

Medicaid, health insurance, transition, college graduate, copays

1. Introduction

Medicaid enrollment grew during the COVID pandemic (1, 2). Enrollment increased both in states with and without Medicaid expansion (3). These increases were independent of the varying levels of economic shutdowns in the different states (4, 5) and can be attributed to the federal government giving incentives to states to keep Medicaid recipients enrolled during the pandemic, to layoffs that forced employees off their employer-sponsored health insurance and onto Medicaid, and to the need for healthcare during a global pandemic. This growth is limited. The current declining rates of COVID hospitalizations and deaths are resulting in these Medicaid disenrollment incentives being removed as of May 2023 (6). Researchers estimate that between 5 and 14 million people will lose their Medicaid insurance benefits (7). Some who are able will likely seek full-time employment from large employers to re-gain lost health insurance benefits.

This study targets a subset of those individuals seeking full-time employment: recent college graduates. Recent college graduates are of particular interest because of the data exploring the economic benefits of earning a bachelor's degree (8–12). Results from this study are useful for informing future research and making recommendations to private employers to promote innovation and minimize health inequities among their new hires

who may be transitioning off Medicaid to private insurance for the first time. Results are also useful for Medicaid administrators to better prepare clients prior to disenrollment. An extant review of the current publications [Elton B. Stephens Company (EBSCO) and Google Scholar] did not identify any published research on transitioning from Medicaid to private insurance.

National survey data as well as local state-based surveys indicate that Medicaid recipients are satisfied with both their Medicaid insurance as well as the accessibility of physicians who accept Medicaid payment (13–16). Conversely, private health insurance satisfaction ranks fourth from the bottom in a comparison of consumer satisfaction, tied with the postal service and just above consumer satisfaction with their subscription television (17). Another national survey found that half of all private insurance recipients do not think their health plan demonstrated concern for their health after the COVID-19 pandemic stuck (18). James et al. (19), Norton et al. (20), and O'Connor and Kabadayi (21) studied health insurance literacy and how a lack of understanding and/or a lack of control negatively impact healthcare utilization, but none of these studies isolated individuals transitioning off Medicaid.

Discontinuing individuals' Medicaid health benefits and requiring them to transition to private insurance, a form of health insurance with lower satisfaction ratings, raises two questions: (1) are these individuals prepared for the transition and (2) what would help them be successful in their transition from public to private health insurance? The purpose of this study was to describe (1) the lived experience of recent college graduates transitioning from Medicaid to private health insurance, (2) what the study participants regard as the crucial aspect(s) of their experience, and (3) how the private sector can minimize healthcare disruptions during these transitions.

2. Methods

In 2021, the author chose to use a phenomenological study design to build a body of knowledge by learning from the experience of recent college graduates. Phenomenology methods explore lived experiences by allowing subjects to describe their own experiences (22, 23). To develop processes to help individuals transition off Medicaid, the first step is to explore an individual's lived experiences through this transition. The research instrument included four, semi-structured, open-ended questions:

1. Tell me about your experience of having private health insurance for the first time.
2. How would you describe the transition from Medicaid to private health insurance?
3. What do you regard as the most helpful or important aspects of successfully transitioning off of Medicaid?
4. What else would you like to add about your experience transitioning from Medicaid to private health insurance?

A pilot study of three individuals led to the omission of the word "successful" to avoid confusion from individuals who did not deem their transition to be successful but could otherwise describe their experience transitioning health insurance payers.

2.1. Participant recruitment

Following Institutional Review Board approval from the A.T. Still University and criterion sampling, the alumni association of a public, urban, Hispanic-serving college emailed recent alumni (graduated within the last 2 years) who self-identified as having received Medicaid in college but now had private insurance. The email contained the study description and asked alumni who met the inclusion criteria to opt in by responding via email. The inclusion criteria included needing to have Medicaid health insurance while in college and, upon graduating, earned a salary that exceeded Medicaid's income threshold, and therefore the alum now had private health insurance. Email exchanges confirmed eligibility, and a Zoom interview was scheduled. Within the first week of the initial email invitation, a total of 30 individuals responded with 15 interviews conducted, two of which were later excluded from the final analysis for failure to meet all eligibility criteria.

2.2. Sample

There were 13 participants included in this study. All participants (100%) identified as a member of a racial or ethnic minority (i.e., Black, Latino/a, or Asian). Participants' ages ranged from 23 to 56 years old, with an average age of 33 (standard deviation = 10.96). A majority (80%) of the study participants identified as female, and salaries ranged from a part-time salary of $25,000/year to $90,000/year.

2.3. Data collection

After respondents returned the informed consent, the author scheduled an online interview that was recorded in Zoom® and later transcribed. No respondents declined the recording or transcribing. On a case-by-case basis, the author used prompts such as "can you elaborate" or "tell me the ways" to obtain more detailed responses. The author also asked for interview participants to consider specific encounters, like an annual check-up, to compare their experience on Medicaid vs. private health insurance.

Interview responses were analyzed as they were collected to identify themes and patterns as well as to recognize when saturation was reached. Data saturation was reached when no new themes emerged, which was achieved after the 10th interview. However, the author proceeded with the five already scheduled interviews to gather more examples.

Interviews lasted approximately 45 min. Following the interview, the author conducted member checking by emailing study participants a summary of the response themes, highlighting if there were any ambiguities or issues for

clarification. The author also sent the study participants a $20 Target e-gift card as a gesture of appreciation. Member checking resulted in confirmation of interview responses.

2.3.1. Validity, reliability, and generalizability

Phenomenology is the appropriate research design to build a body of knowledge based on the experiences of those who have lived the event (24). Phenomenologies are subject-defined explorations of the lived experience by a defined group of people using their words, perceptions, and understanding (25). Phenomenological studies are not intended to be generalized from; phenomenological research has the smallest sample size of qualitative research. By Khan's (25) definition, a phenomenological research design ensures the validity of the research as the results are the lived experiences in their own words. The author ensured data reliability by consistently asking the same open-ended questions, in the same manner (26).

The author also ensured the validity of the research by rigorously following Morse's (27) six criteria for evaluating the qualitative research: credibility, confirmability, meaning in context, recurrent patterning, saturation, and transferability. The interviews were not intended to be representative of anyone except the individuals who experienced the transition. Demographic data were collected only to provide more context for participants' lived experiences.

2.4. Data cleaning

The purpose of data cleaning was to clarify the intention of the interview subject and ensure that the data were an accurate reflection of the subjects' experiences. Cleaning the interview transcripts (data) was a multi-step process culminating in coding the cleaned transcripts. Coding is not traditionally part of phenomenological data analysis (26). However, coding the data was helpful for organizing responses into themes. The final data coding procedure was an iterative process of reading and re-reading the transcripts following the steps of Giorgi et al. (28) for reviewing qualitative data.

3. Results

The overall themes that emerged from the interviews were that everyone who described the lived experience of transitioning from Medicaid to private insurance experienced felt unprepared, some degree of difficulty with the transition, and a sense of shock at the out-of-pocket expenses, most commonly expressed as "copays" said emphatically with hands in the air for emphasis. The words interview participants used to describe the transition were "difficult," "shocking," and "sudden," leaving the interview participants scared and sometimes ashamed to ask for help.

These main findings of overall themes are presented in Figure 1.

All but two of the interview subjects had prior awareness of the cost of private insurance or the cost of healthcare, yet all responded to interview questions by commenting on the cost of medical

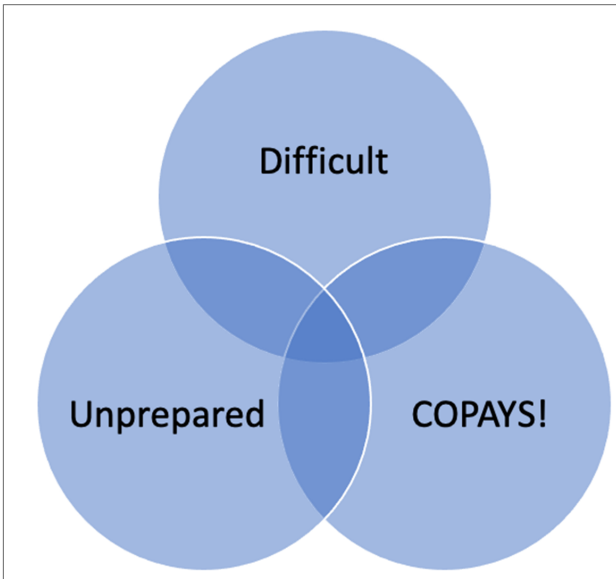


FIGURE 1
Venn diagram of overall study findings.

services. P2 said, "Medicaid did not prepare me for the expense of medical care." P14 described the transition as, "You get something for free for a long time then you get a letter that your coverage will stop," resulting in tremendous stress over the unknown costs ahead and a rush to use Medicaid benefits while coverage still existed. Every interview subject responded to questions about their transition by describing their lack of preparation. The most common responses in the interviews are presented in Figure 2. Transitioning from Medicaid—where patients see Medicaid-approved providers and there is no patient paperwork—to private insurance, where patients have to do their homework to identify who is in-network, and patients receive volumes of paperwork from their insurance providers, was an experience for which interview subjects felt unprepared and overwhelmed.

The study subjects had an awareness of improved access to providers with private insurance over Medicaid (62%), the sense of pride in this earned benefit (described by 46% of the interview sample), the feeling of being unsupported in the transition (46%), the feeling that they needed to change their behaviors to avoid copayments by not using their benefits (46%), and the feeling of being risk averse during a global pandemic (38%). The experience of improved access was summarized by P9, a parent of a child with special needs. P9 had previously relied on Medicaid's early intervention services and was unaware of the services available and covered by private insurance. P9 also emphasized the difference in wait times, appointment availability, and individualized attention at private facilities compared to the higher volume, Medicaid-accepting facilities. P11 similarly described her experience transitioning insurance types as finally having her choice of providers instead of being referred to one provider and not being offered a choice.

A similar theme through many of the interviews was a frustration and disappointment in the cost of medical care.

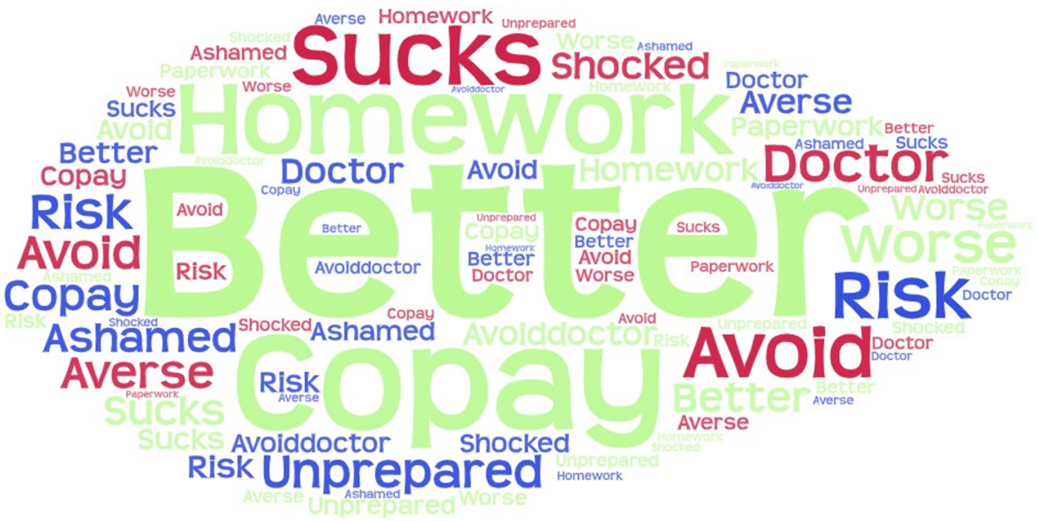


FIGURE 2
Word cloud of question 1 responses.

Everyone mentioned "copays" as something they did not pay with Medicaid and that had now become the defining experience of receiving private medical insurance. P6 said, "I am afraid of copays" and does not use the private health insurance, preferring to use herbs and self-care. While P4 said that copays are so high, P4 believes health insurance is a scam because "doctors like copays too much."

There are two distinct ways as presented in the data that individuals describe the lived experience of transitioning off Medicaid: a sense of pride and a sense of fear. The sense of pride even though private health insurance was expensive and often an expense the interview subject had no reference for. However, the study subjects felt a sense of pride at now being able to pay these costs on their own, not relying on the government or family, and appreciating the responsibility. The sense of fear came from a lack of preparation. Medicaid does not share invoices, bills, or any paperwork with recipients, so the interview subjects had neither context nor expectation of the premiums, copayments, deductibles, and/or coinsurance they faced.

Fear of not being able to pay for the high costs associated with private health insurance came from their lack of awareness or understanding of how private health insurance worked, and for some, their incredulity and distrust of the system. These interview subjects believed the system to be corrupt where "doctors like copayments"; these interview subjects did not use their health insurance benefits. Their understanding of the transition was from using their Medicaid whenever they felt it was medically appropriate to never using their private health insurance because they were afraid of the copayments. A summary of representative themed responses is presented in Table 1.

TABLE 1 Theme-to-text table.

Theme	Quote
Difficult	"I was ashamed of not understanding the insurance options."
	"Losing Medicaid is like the rug getting pulled out from under you." "Losing Medicaid felt like getting kicked when you're already down."
Copays	"Medicaid felt like a warm blanket there to cover me."
Unprepared	"Nobody teaches you this in school." "Parents don't teach their kids about this [health insurance]."
Improved access to providers	"Agencies that provide behavioral therapy (ABA) do not take Medicaid, only private insurance. If you have Medicaid, you don't even know that ABA exists, and that your kid isn't eligible for it."
Unsupported	"Imagine somebody else did everything for you. For free. Then all of the sudden it's your turn? No support, no nothing."
Change behaviors to avoid copayments	"I used to go to the dentist every six months. I can't remember the last time I went because I don't understand my new benefits."
Risk averse	"I didn't have health insurance before; it was too expensive. But during open enrollment, I signed up. You can't not have health insurance during the pandemic."
Sense of pride	"Not shocked. Not mad. It feels pretty awesome to do this." "I'm not scared of the financial burden [of health insurance], I earned it."

4. Discussion

The primary finding of the study was that 100% of the interview subjects experienced feeling unprepared for the transition. All respondents also described the steep learning curve associated with understanding premiums, copayments, deductibles, and finding in-network providers, all concepts that Medicaid recipients do not pay nor experience. Support services would similarly help Medicaid recipients' transition to private health insurance and learn how to navigate the unfamiliar experience. These findings are in keeping with previous research by James et al. (19), Norton et al. (20), and O'Connor and Kabadayi (21) on how health insurance literacy and the lack of understanding of cost sharing and managed care impacts healthcare utilization.

The lived experience of paying for private health insurance after receiving free Medicaid varied. Approximately half of the interview

subjects took pride in their new skillset and abilities to earn their families' health benefits. There is a parallel between the finding of pride in the ability to earn one's own health benefits and the findings of Blakeslee and Best (29) and Munson et al. (30) who concluded that foster children who are successfully emancipated from the state are those who gain a sense of control over their circumstances. Taking pride in being able to pay for the healthcare that one once had to rely on the state to provide is a sense of control. This sense of control potentially contributed to the pride experienced by study subjects. These same interview subjects also responded to probes that they do not intend to ever be on Medicaid again.

The other half of interview subjects described feeling so uncertain and unfamiliar with the copayments, coinsurance, and deductibles that the interview subjects did not use their insurance, preferring to seek self-care and use over-the-counter treatments to avoid paying copayments. There are public health implications if insured individuals, like half of those interview subjects in this study, do not use their health insurance out of fear of paying an unknown copayment, coinsurance, or deductible or because they distrust the healthcare system. Research demonstrates how Medicaid recipients, by definition of their lower income, suffer a disproportionate amount of health issues relative to higher earners (31, 32). The consequences of former Medicaid recipients no longer seeking healthcare could have the same meaningful health effects.

All of the interview subjects experienced some degree of confusion upon transitioning to private health insurance. Payroll deductions, insurance vocabulary, and knowing who to ask for help were all topics of confusion. This research demonstrated that some individuals were too embarrassed to ask for help and felt alone in their transition. Recent college graduates from lower socio-economic backgrounds are often overwhelmed and fatigued by the experience of finishing their education, understanding their college debt, and transitioning to the working world, while still experiencing housing and food insecurity. Medicaid deemed the recent graduates as out-earning the income requirements; but to the graduates, they were only a few paychecks away from poverty with new expenses of college debt and health insurance costs. Understanding payroll deductions was not a common theme but is a topic worthy of follow-up. Also, interview subjects asked rhetorical questions about paying premiums for insurance while also sometimes having to pay copayments per encounter plus dental, lab, and vision benefits were not covered like other medical encounters, incurring coinsurance costs, a very different experience from Medicaid. There was confusion about what is purchased when a health insurance premium is paid, and why there are additional costs per service or encounter.

An unexpected finding from this research was that some Medicaid recipients were able to petition their Medicaid caseworker for an extension of not only Medicaid benefits but also food stamps for up to 90 days to help with their transition, while other Medicaid recipients were abruptly disenrolled without any prior warning. College students finishing their degree while living on poverty-level wages may have neither the support networks nor experience to know to ask for an extension of their benefits. As studied by Payne-Sturges et al. (33) and Broton and Goldrick-Rab (34), the impact of college students living in poverty results in food insecurity and impacts both physical and mental health, in addition to having consequences on academic performance. Recent college alumni could be given resource materials about their Medicaid benefits and how to maintain the benefits for a limited time while transitioning to private health insurance. Like P13 responded, annualized salaries may disqualify the individuals from Medicaid benefits. However, the individual is still living in poverty after receiving the first few paychecks. Paying a $25 copayment for a private insurance medical encounter is unaffordable if one has only earned a fraction of an annual salary.

Another common theme expressed during the interviews was that "you don't know what you don't know" (P1, P2, P5, P7, P10, P12, P13, and P14) until one has private insurance. In most states, Medicaid is a form of health insurance but with no paperwork and no cost to the recipient; the experience of having Medicaid is dissimilar from the experience of having private health insurance with the copious paperwork and costs. The individuals interviewed for this research study did not know that they were unprepared for the transition as they did not know the costs or paperwork involved with being a consumer of private health insurance. Furthermore, recipients of private health insurance have to research who is an in-network provider or pay the consequences of going out-of-network. Recipients of Medicaid rely on their Medicaid providers to make in-network referrals and the Medicaid recipients are not responsible for costs or research nor do they see any paperwork.

The findings from this study reveal an unmet need: former Medicaid recipients need educational materials and help selecting private health insurance and learning how to use their benefits. P4 described the emphasis in school on topics of professionalism. P4 felt well prepared to transition from school to the working world; however, none of the educational content on professionalism and how to manage work-related responsibilities helped with the specific skills and vocabulary needed to select a health insurance provider, read a paystub, identify in-network providers, and know how to use Healthcare savings accounts (HSA) money. P4 described experiencing a false sense of preparation because they had erroneously drawn an analogy between professionalism and real-world preparation. Similar to the first-generation college student support services and orientations, the author's research demonstrates a need for support services as graduates transition from college to full-time employment. Many of the interview subjects do not have support networks and are the first in their family not to receive Medicaid.

5. Limitations

The limitations of this study were associated with problems caused by the COVID-19 pandemic that touched data collection, study population, and geographical location. Data collection occurred in January 2021 in the Mid-Atlantic region of the country at a time when COVID-19 diagnoses were at its post-holiday peak. There were limits on public transportation, restrictions on gatherings, and other laws to prevent spread of the highly transmissible virus. The impact of the global

pandemic on individual's employment status and interest in participating in the study is unknown, but likely limited the ability to reach a larger population of potential study participants. The resulting small sample size limits generalizability. Similarly, only one state's Medicaid rules and communications are reflected, further limiting generalizability to larger populations.

The impacts of the global pandemic may have led to job losses or limitations on work hours, both leading to possible research participants remaining on Medicaid longer than they would have if the pandemic did not occur. It is also possible that study participants may not have been able to commit time and energy to participate in a study when the economic and health situation of the pandemic created more urgent needs and worries.

Another limitation of this research is that sampling mainly health-related majors may have impacted the findings of the study, in that only one of the interview subjects was from a non-health-related discipline (P4 was a computer science major). The interview subjects' responses reflect their lived experiences of transitioning health insurance having studied health sciences while in college and now working in health-related fields (e.g., nursing, health administration, and social work). In addition, participants often use the word "copay" as an answer assuming the author understood the complexity of that answer, which then required the author to further question their experiences and intentions as to what they mean by "copay" explaining the health insurance transition.

6. Recommendations for future research

The first recommendation for future research is a larger version of this study conducted with alumni outside health sciences. To understand the micro-level experience of transitioning from Medicaid to private insurance, it is important to hear from a variety of students of a diverse, representative array of college majors. These findings will better inform their employers as to how to help them understand their new health benefits.

Interview subjects described self-medicating and avoiding the healthcare system to avoid paying copayments. This is a subject for future research. What are the health implications of avoiding the healthcare system for a patient population—former Medicaid patients—who bear a disproportionate health burden having spent some portion of their life in poverty? A related topic for future research and educational activities is to help new private insurance recipients understand their benefits. Based on the research interviews, it is unclear if the interview subjects were unaware that there is no cost sharing with preventative visits, and it is also unclear if interview subjects were aware of how private health insurance tiers copayments by physician specialty. The private sector has an opportunity here to innovate, improve outcomes, minimize inequities, and ensure resilience by better on-boarding their new hires.

Every interview subject described some degree of difficulty with health insurance transition with two individuals not knowing that they were disenrolled from Medicaid and had private health benefits until trying to use their Medicaid card and being denied care. For these interview subjects, they did not know how to read their paystubs and interpret the payroll reductions. One of the interview subjects did not know that they were enrolled in a healthcare savings account with additional money deducted from their paycheck. Future research is warranted to study the lack of understanding of payroll reductions as well as studies of educational campaigns that help with job transitions.

Finally, additional research is needed to understand the experience of paying for something that was in their experience previously free. Interview subjects described being on Medicaid for their entire lives, and though they were poor, they never had to worry about accessing the healthcare system or paying for care. Now that the interview subjects out-earn the Medicaid income restrictions, they are charged a premium, deductible, coinsurance, and/or copay for healthcare and are experiencing the stress of affording care. The stress of paying for services that were historically free made half of the interview subjects describe assuming that they would be on Medicaid again in the future, and they want to be sure to have access to affordable healthcare. Furthermore, interview subjects describe distrusting the medical system now that they have private insurance, responding that doctors love their copays and feeling like health insurance is a scam.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the author, without undue reservation.

Ethics statement

The studies involving humans were approved by ATSU IRB and Lehman College IRB. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

Acknowledgments

The author wishes to acknowledge the editorial and concept support from Allison Smith-Estelle, ScD, MS, and Susan Garfield, DrPH, MSc, SM.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

1. Sun R, Staiger B, Chan A, Baker LC, Hernandez-Boussard T. Changes in Medicaid enrollment during the COVID-19 pandemic across 6 states. *Medicine (Baltimore)*. (2022) 101(52):e32487. doi: 10.1097/MD.0000000000032487

2. Khorrami P, Sommers BD. Changes in US Medicaid enrollment during the COVID-19 pandemic. *JAMA Netw Open*. (2021) 4(5):e219463. doi: 10.1001/jamanetworkopen.2021.9463

3. Benitez JA, Dubay L. COVID-19-related unemployment and health insurance coverage in Medicaid expansion and non-expansion states. *Health Serv Res*. (2021) 56(S2):20. doi: 10.1111/1475-6773.13745

4. Allen HL, Sommers BD. Medicaid and COVID-19: at the center of both health and economic crises. *JAMA*. (2020) 324(2):135–6. doi: 10.1001/jama.2020.10553

5. Frenier C, Nikpay SS, Golberstein E. COVID-19 has increased Medicaid enrollment, but short-term enrollment changes are unrelated to job losses. *Health Aff (Millwood)*. (2020) 39(10):1822–31. doi: 10.1377/hlthaff.2020.00900

6. H.R.2617—117th congress (2021–2022): consolidated appropriations act, 2023 (2022). Available at: https://www.congress.gov/bill/117th-congress/house-bill/2617. (Accessed February 13, 2023).

7. Tolbert J, Ammula M. *10 things to know about the unwinding of the Medicaid continuous enrollment provision*. Kaiser Family Foundation (2023). Available at: https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-the-unwinding-of-the-medicaid-continuous-enrollment-provision/ (Accessed February 10, 2023).

8. Belfield CR, Bailey TR. The labor market value of higher education: now and in the future. In: Paulsen M, Perna L, editors. *Higher education: handbook of theory and research*, Vol. 34. Cham: Springer (2019) p. 373–414. doi: 10.1007/978-3-030-03457-3_9

9. Cappelli P. The return on a college degree: the US experience. *Oxf Rev Educ*. (2020) 46(1):30–43. doi: 10.1080/03054985.2019.1689939

10. Chetty R, Friedman JN, Saez E, Turner N, Yagan D. Mobility report cards: the role of colleges in intergenerational mobility. NBER working papers, 1. (2017) Available at: http://www.equality-of-opportunity.org/papers/coll_mrc_paper.pdf. (Accessed February 13, 2023).

11. Lobo BJ, Burke-Smalley LA. An empirical investigation of the financial value of a college degree. *Educ Econ*. (2018) 26(1):78–92. doi: 10.1080/09645292.2017.1332167

12. Wright AM, Ross MM, DeMello JP. To college, or not to college: an individualized approach to human capital investment. SSRN Electronic Journal (2019). Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3440674. (Accessed February 13, 2023).

13. Barnett ML, Clark KL, Sommers BD. State policies and enrollees' experiences in Medicaid: evidence from a new national survey. *Health Aff*. (2018) 37(10):1647–55. doi: 10.1377/hlthaff.2018.0505

14. Barnett ML, Sommers BD. A national survey of Medicaid beneficiaries' experiences and satisfaction with health care. *JAMA Intern Med*. (2017) 177 (9):1378–81. doi: 10.1001/jamainternmed.2017.3174

15. Wallace J. *What does a provider network do? Evidence from random assignment in Medicaid managed care. Am Econ J Econ Policy*. (2019) 15(1):473–509. doi: 10.1257/pol.20210162

16. Wallace J, Lollo A, Ndumele CD. Comparison of office-based physician participation in Medicaid managed care and health insurance exchange plans in the same US geographic markets. *JAMA Netw Open*. (2020) 3(4):e202727. doi: 10.1001/jamanetworkopen.2020.2727

17. American Consumer Satisfaction Index. ACSI finance, insurance, and health care report 2018-2019 (2019). Available at: https://www.theacsi.org/news-and-resources/customer-satisfaction-reports/report-archive/acsi-finance-insurance-and-health-care-report-2018-2019 (Accessed February 13, 2023).

18. J.D. Power. Health plans have a customer engagement problem. J.D. Power Finds (2020). Available at: https://www.jdpower.com/sites/default/files/file/2020-05/2020053%20U.S.%20Commercial%20Member%20Health%20Plan.pdf (Accessed February 13, 2023).

19. James TG, Sullivan MK, Dumeny L, Lindsey K, Cheong J, Nicolette G. Health insurance literacy and health service utilization among college students. *J Am Coll Health*. (2020) 68(2):200–6. doi: 10.1080/07448481.2018.1538151

20. Norton M, Hamel L, Brodie M. *Assessing Americans' familiarity with health insurance terms and concepts*. The Henry J. Kaiser Family Foundation (2014). Available at: https://www.kff.org/health-reform/poll-finding/assessing-americans-familiarity-with-health-insurance-terms-and-concepts/. (Accessed February 13, 2023).

21. O'Connor GE, Kabadayi S. Examining antecedents of health insurance literacy: the role of locus of control, cognitive style, and financial knowledge. *J Consum Aff*. (2020) 54(1):227–60. doi: 10.1111/joca.12266

22. Neubauer BE, Witkop CT, Varpio L. How phenomenology can help US learn from the experiences of others. *Perspect Med Educ*. (2019) 8:90–7. doi: 10.1007/s40037-019-0509-2

23. Teherani A, Martimianakis T, Stenfors-Hayes T, Wadhwa A, Varpio L. Choosing a qualitative research approach. *J Grad Med Educ*. (2015) 7:669–70. doi: 10.4300/JGME-D-15-00414.1

24. Gall MD, Gall JP, Borg WR. *Applying educational research: how to read, do, and use research to solve problems of practice*. Boston, MA: Pearson (2015).

25. Khan SN. Qualitative research method—phenomenology. *Asian Soc Sci*. (2014) 10:21. doi: 10.5539/ass.v10n21p298

26. Cypress BS. Rigor or reliability and validity in qualitative research. *Dimens Crit Care Nurs*. (2017) 36(4):253–63. doi: 10.1097/DCC.0000000000000253

27. Morse J. Critical analysis of strategies for determining rigor in qualitative inquiry. *Qual Health Res*. (2015) 25:1212–22. doi: 10.1177/1049732315588501

28. Giorgi A, Giorgi B. Phenomenology. In: Smith JA, editor. Qualitative psychology: A practical guide to research methods. London, UK: Sage Publications, Inc. (2003). p. 25–50. London, UK: Sage Publications, Inc.

29. Blakeslee JE, Best JI. Understanding support network capacity during the transition from foster barriers, facilitators, and enhancement strategies. *Child Youth Serv Rev*. (2019) 95:220–30. doi: 10.1016/j.childyouth.2018.11.049

30. Munson MR, Stanhope V, Small L, Atterbury K. "At times I kinda felt I was in an institution": transition age youth and young adults. *Child Youth Serv Rev*. (2017) 143:430–6. doi: 10.1016/j.childyouth.2016.11.027

31. Roos LL, Wall-Wieler E, Lee JB. Poverty and early childhood outcomes. *Pediatrics*. (2019) 143:6. doi: 10.1542/peds.2018-3426

32. Shepherd L, Wilson RF. Introduction: the medicalization of poverty. *J Law Med Ethics*. (2018) 46(3):563–6. doi: 10.1177/1073110518804197

33. Payne-Sturges DC, Tjaden A, Caldeira KM, Vincent KB, Arria AM. Student hunger on campus: food insecurity among college students and implications for academic institutions. *Am J Health Promot*. (2018) 32(2):349–54. doi: 10.1177/0890117117719620

34. Broton KM, Goldrick-Rab S. Going without: an exploration of food and housing insecurity among undergraduates. *Educ Res*. (2018) 47(2):121–33. doi: 10.3102/0013189X17741303

frontiers | Frontiers in Health Services

TYPE Policy Brief
PUBLISHED 18 September 2023
DOI 10.3389/frhs.2023.1216234

OPEN ACCESS

EDITED BY
Susan S. Garfield,
ey US, United States

REVIEWED BY
Christine Hildreth,
Ernst and Young, United States
Yele Aluko,
Ernst and Young, United States

*CORRESPONDENCE
Marta A. Balinska
✉ Peroutka.m@chu-nice.fr

RECEIVED 03 May 2023
ACCEPTED 06 September 2023
PUBLISHED 18 September 2023

CITATION
Pradier C, Balinska MA and Bailly L (2023) Enhancing multi-sectoral collaboration in health: the open arena for public health as a model for bridging the knowledge-translation gap.
Front. Health Serv. 3:1216234.
doi: 10.3389/frhs.2023.1216234

Enhancing multi-sectoral collaboration in health: the open arena for public health as a model for bridging the knowledge-translation gap

Christian Pradier[1,2], Marta A. Balinska[2]* and Laurent Bailly[1,2]

[1]Department of Public Health, Nice University Hospital, University of Côte D'Azur, Nice, France, [2]Clinical Research Unit (UR2CA), Nice University Hospital, University of Côte D'Azur, Nice, France

Effective public health interventions at local level must involve communities and stakeholders beyond the health services spectrum. A dedicated venue for structured discussion will ensure ongoing multi-sectoral collaboration more effectively than convening *ad hoc* meetings. Such a venue can be created using existing resources, at minimal extra cost. The University Hospital in Nice (France) has established an Open Arena for Public Health which can serve as a model for promoting collaborative partnerships at local level. The Arena has been successful in implementing sustainable interventions thanks to a set of principles, including: non-hierarchical governance and operating, fair representation of stakeholders, consensus as to best available evidence internationally and locally, policy dialogues: open, free-flowing discussions without preconceived solutions, and an experimental approach to interventions.

KEYWORDS

policy dialogue, multi-sectoral collaboration, community-Based participatory research, health promotion, knowledge sharing

1. Introduction

As we move towards the second quarter of the 21st century, evidence-based medicine has taken the lead on expert clinical practice. Likewise, we are increasingly moving towards evidence-informed health policies and away from interventions guided by expertise or political will only. In parallel to the emergence of evidence to support decision-making in medicine and public health, experience is demonstrating the key role of involving communities in the design of public health interventions (1–3). Collaborative governance and community-based participatory research have made remarkable strides since the turn of the century. Increasingly, funders are requiring not only community participation in health promotion research (4), but cultural competency of relevant stakeholders and officials (5).

Stakeholder involvement in the design of interventions is necessary not only to determine their characteristics and scope, but also their uptake and ultimately their sustainability, without which even the most carefully designed initiatives will not produce the desired effects (6). Historically, many public health campaigns have been based on informing the public on the assumption that knowledge alone is enough to change behavior. But now we know that communities must also have the means to change their behavior.

The World Health Organization is increasingly promoting policy dialogues as the key knowledge translation tool for evidence-informed policy making (7). "Policy dialogues"—while not yet benefiting from an official definition—are broadly described as an

interactive knowledge-sharing mechanism among a comprehensive range of stakeholders. Their use is encouraged for response to major public health problems, especially those which "resist solution, where there is no clear "right" answer and a number of different interests, priorities and values are in tension" (8). For instance, the WHO recently called for policy dialogues to tackle the obesity epidemic across the European region (9).

For the past 15 years, the Open Arena for Public Health (Espace Partagé de Santé Publique) in the department of Alpes Maritimes (South Eastern France) has been bringing together academics, decision-makers, and community representatives on a regular basis to tackle local health challenges. Although not formally designated as such, the de facto mechanism of concertation has been policy dialogues. Elsewhere, policy dialogues have been convened mostly on an *ad hoc* basis (10) (11, 12), but there is growing recognition that their systematic use—as in Alpes Maritimes—would be beneficial to promoting regular interaction of stakeholders in a given community setting (13, 14).

In this policy brief, we make recommendations for enhancing multi-sectorial collaboration via a dedicated space such as the Open Arena for Public Health in Nice which engages in ongoing policy dialogues.

2. Functioning of the open arena for public health

2.1. The open arena and the public health landscape in France

France has a long history of centralization. The country is divided administratively into 5 regions and 101 departments (including overseas). Piloting and coordination of health policies are ensured at the national level and translated locally via regional health agencies.

Any public health/health promotion intervention which does not fall directly within the prerogative of the department or the municipality (such as school lunches or sports venues) must be approved for funding by the regional health agency. Broadly speaking, the public health landscape remains rigid and top heavy with limited scope for adapting national policies to local contexts.

To overcome this rigidity, the University Hospital of Nice instituted an Open Arena for Public Health to be managed by the hospital's Department of Public Health. The aim of the Open Arena has been to improve the health status of communities living in Alpes Maritimes through collaborative partnerships among community representatives, civil society organizations, local health stakeholders, and academic institutions. From its inception, it has sought to federate across parties and respond in a timely fashion to evolving health determinants and population expectations, in line with the principles of health promotion and the new public health. The Arena was established using existing resources—i.e., the time and expertise of staff within the Department of Public Health—thus incurring no extra cost.

The Arena operates via a Steering Committee and an Operational Board. Project selection and decision-making are based on public health data, academic expertise, and community participation using a policy dialogue mechanism. The Open Arena also carries out consultative and technical support activities. As such, it breaks down administrative barriers among existing institutions and fosters collective thinking and collaboration among professionals and community members unused to working together. Community representatives are identified by a snowballing process, starting with civil society organizations and local stakeholders known to the municipality or greater Nice area. All partners volunteer their time to ensure cost containment. When funding for a specific project is required, it will be sought within the budgets of partnering institutions.

The Open Arena will meet whenever a complex public health priority is identified, such as poor uptake of cancer screening (15), or medical desertification in rural areas. As a department of France suffering from marked social disparities, the Arena is particularly concerned with health problems linked to inequalities and inequities. The process for convening the Arena can be reactive, e.g., in response to community concerns over a health-related issue such as pollution, or proactive as when the Steering Committee alerts members to a major health concern such as high prevalence of pediatric obesity in certain Nice neighborhoods. Discussion is rooted in scientific evidence provided by the Department of Public Health, but evolves freely as participants share their knowledge, experience, and skills. Typically, this encourages thinking out of the box and leads to innovative proposals involving new partnerships.

2.2. Example of an open arena intervention: preserving autonomy for the elderly

One of the first requests made to the Arena's Steering Committee was to think about new housing solutions for the dependent elderly. Several policy dialogues were convened, involving a wide range of stakeholders. The discussions shifted their focus from housing to the preservation of autonomy in senior citizens and came up with a comprehensive model for reducing loss of autonomy in the elderly. In line with the Ottawa Charter for Health Promotion, the Open Arena wished to empower older individuals with regard to their health through enhanced physical activity and ongoing social interaction. Over the past decades, several community-based health interventions have been developed to promote healthy ageing, specifically through physical activity (16–18).

The pilot intervention (the 4-S initiative: Saint-Roch—Sport—Solidarity—Senior Citizens) consisted of improving the urban environment of a socially disadvantaged neighborhood of Nice (Box 1). Consultations were carried out with local senior citizens, thus leading to a walking route in line with the expectations of those who would use them (19). The walking routes were also a means of strengthening social ties through meeting places such as open areas and shops. The evaluation of the intervention indicated enhanced quality of life for older individuals through a holistic approach including physical, social and mental well-being (20). Importantly, the intervention fit within the model of integrating progressive loss of autonomy into the life course of older individuals. This model seeks to create an environment

BOX 1 The 4-S initiative: Saint-Roch, sport, solidarity & senior citizens.

Problem: lack of housing for the dependent elderly.
Shared Vision: maintaining autonomy in senior citizens is a priority.
Context: preventing institutionalization is humanly preferable and less costly for the state than increasing the number of beds for the elderly.
Evidence base: enhancing senior citizens' regular physical activity can prevent loss of autonomy and improve quality of life in older population groups.
Solution identified: encourage neighborhood walking as a freely accessible means of physical exercise for all senior citizens.
Pilot community: the Saint-Roch district, a low-income neighborhood in Nice lacking adequate sidewalks and green spaces, with poorly controlled traffic.
Main intervention: urban walking trails.
Result: improvement in endurance score for Saint-Roch residents compared to residents of a neighborhood without urban walking trails.
Outcome: urban walking trails introduced in four other Nice neighborhoods.

conducive to "better ageing", including a network of medical and social support, and suitable housing for those who become too dependent to live in their own home. Thus, institutionalized living is no longer the prime issue to be addressed, but emerges as a solution for the most vulnerable. Further, housing for the dependent elderly is foreseen within the neighborhood where they have previously lived.

Multi-sectoral partnering such as the Open Arena for Public Health is unique in France, yet can be replicated in almost any setting. In order for it to achieve its purpose, a number of actions can be recommended.

3. Actionable recommendations

3.1. Strong but non-hierarchical governance

The Open Arena for Public Health does not have a specific legal structure or dedicated funding. It operates through a Steering Committee, an Operating Board, and Project Groups. It is operational and flexible, and encourages both a bottom-up and top-down approach, although the ultimate decision-making power remains with the Steering Committee. Members volunteer to join working groups and dedicate their working time, thus allowing the Arena to function without incurring extra cost. In face of a specific challenge or problem, leaders will articulate a vision which can be shared by all, but they do not plan any interventions beforehand or present preconceived ideas. Instead, policy dialogue and interaction allows stakeholders to come up with original proposals and solutions in line with the shared vision.

Specifically:

- The Steering Committee is the strategic core. It includes all decision-makers responsible for identifying partners, funding sources, and communication strategies. The Steering Committee maintains trust and cooperation among stakeholders and creates an environment favorable to change over time. It meets once a year.
- The Operating Board, made up of stakeholders and academics, meets at least three times a year. It develops the strategies required for change to materialize. Each time a new project is launched, a dedicated team is set up and evaluation protocols are developed. The Operating Board is responsible for coordinating these teams and making recommendations to the Steering Committee on the basis of collective discussions.
- The Project Groups bring together stakeholders (often technical experts) directly involved in implementing interventions. They are in charge of representing communities' needs and developing approaches which allow individuals to be actors of their own health. The Project Groups also identify and report any problems encountered in the field and suggest solutions. They meet at different times depending on how the intervention is progressing and which actions need to be taken.

This three-tiered structure is intended to be both adaptive and self-organizing. Participants have freedom of action and influence each other collectively. Such room for maneuver, sharing of experience, and pooling of skills leads to creative experimentation in responding to local health challenges. Participants in Open Arena discussions must feel they are on equal footing when analyzing evidence and seeking solutions. As observed in the "Model of Research-Community Partnership", described by Brookman-Frazee, facilitating factors for collaborative processes depend on non-hierarchical, collegial relations among partners based on mutual respect and trust (21).

3.2. Fair representation of stakeholders

In face of a given challenge, it is essential that the entire range of stakeholders be represented, and contribute to the policy dialogue. Failure to invite a key stakeholder can compromise the identification of a workable solution and/or its uptake in the community.

Bringing together representatives from different organizations, communities, disciplines, backgrounds, and cultures to exchange knowledge, discuss evidence, and suggest ways forwards always presents challenges. There must be mutual respect and acceptance that consensus cannot always be secured as a single set of actions, but will often take the form of a multiplicity of perceived solutions (a hallmark of policy dialogues).

For instance, regarding the model of loss of autonomy in the elderly and the 4-S initiative, academic and public health professionals contributed their knowledge and expertise; community representatives provided citizen's feedback regarding their specific social, environmental, and cultural context; and municipal policymakers were able to discuss financing in the context of competing priorities so as to make the best use of public funds.

3.3. A shared vision, but not preconceived solutions

While the policy dialogue itself remains an open and free-flowing discussion with minimal rules, it is essential that the participants start out with a shared vision of the problem at hand, and the importance for public health of addressing it adequately.

Prior to elaborating the walking trails intervention in a disadvantaged Nice neighborhood, all participants agreed that solutions needed to be found in face of lack of housing for the dependent elderly and, generally speaking, that more needed to be done to promote healthy ageing in the city of Nice. They were thus fully engaged in the need for and process of change.

3.4. Thinking global—acting local

The Open Arena's initiatives are aligned with major international objectives such as reducing obesity or creating healthy cities, but conceived on a very local scale—most often in terms of neighborhoods. Beyond considerations of experimentation and tailored interventions, the neighborhood is the nexus of everyday life in which individual and collective responsibility take on concrete meaning.

In the United States, the "Active Living by Design" national program was established to help 25 programs resulting from interdisciplinary collaborative partnerships create healthy urban environments and increase physical activity and social support within neighborhoods (22, 23). This kind of community action model has been successfully applied in other countries (24, 25) and served as an inspiration to the Open Arena in Nice when developing its own interventions to promote healthy ageing.

Taking a territorial approach (districts) means that population needs—both expressed and unexpressed—can be deliberately considered. Interventions at different levels of the health continuum contribute to promoting healthy lifestyles through educational and environmental strategies. These actions should be developed according to a life course approach, by intervening upstream on the determinants of health to prevent the loss of autonomy, and better meet the needs of an ageing population.

3.5. Discussions based on evidence

The golden rule for policy dialogues is that they be based on available evidence. This evidence should be summarized in plain language and shared with all participants before the initial meeting. Evidence is based on national and international data (Santé Publique France, WHO, scientific publications, etc.) but also draws on local aggregated data made available by the national income tax and statistics agencies. The strength and appropriateness of this evidence may be debated, but it serves as a starting block on which to build. Often, this evidence needs to be completed.

In what led up to the enhanced physical activity initiative, social science researchers introduced the life course approach to discussions around healthy ageing and relevant information was made available to all participants.

Interestingly, partners involved in the dialogues initially each had their own project in mind for enhancing physical exercise for the elderly. But the discussions led to a synergetic effect and identified urban walking trails as the best practicable solution.

Focus group discussions with neighborhood residents collected experiences of physical activity, requirements to improve walking opportunities, and proposals to overcome perceived difficulties. Participants clearly stated that heavy traffic, sidewalk parking, unavailable pedestrian passages or limited vision at crossings led to a sense of insecurity and discouraged them from walking in their own neighborhood. They then proposed their own itinerary which included congenial spots and avoided unpleasant ones. Such specific input was obviously crucial to creating urban trails which people would actually use.

3.6. Experimental approach

The beauty of policy dialogues is that they can, and often do, lead to new ideas (or old ideas which have been forgotten). All the health promotion interventions conducted by the Open Arena are first tested on a small scale (usually a pilot study within a target community) and replicated only if successful.

The Saint-Roch district was chosen as the target neighborhood for the 4-S Initiative being a low-income neighborhood in the city center. Another low-income neighborhood was selected as the control. The goal was to assess the combined impact of an organized urban walking circuit and individual coaching on female senior citizens' physical well-being and quality of life. Older women in the target and control districts were randomly allocated to receive coaching. The invention was funded by the regional health agency and targeted over 4,000 citizens above the age of 64. At three months, the endurance score was higher in the improved urban environment group, whether coupled with coaching or not (20).

4. Conclusion

The Open Arena for Public Health is an example of a local initiative which has led to substantial social and political innovation in improving population health in Alpes Maritimes (**Table 1**). The Arena clearly arose within the premises of the new public health, meaning "community participation in health policy development and implementation of programs, [emphasis on] primary health care and health promotion, and inter-sectoral cooperation involving agencies whose influence impinges on health" (26). It seeks to bridge the gap between academics, on the one hand, and policy makers and implementers on the other, in order to improve community health.

That is how—when it was called upon to deal with the problem of lack of housing for the dependent elderly—it focused on means to improve senior citizens' overall health status, thus allowing them to remain in their own homes for as long as possible. The actions decided upon involved a wide spectrum of stakeholders, well beyond the health system. Such diversification of stakeholders, skills, and expertise clearly enhances both tacit and explicit knowledge sharing, and also leads to varied interpretations and intermediary solutions arising from mutual exchange and learning. Within this context, academics have played a key role by framing discussions within the most recent concepts in public health.

TABLE 1 Examples of interventions resulting from policy dialogues within the open arena for public health.

Problem	Evidence/Vision	Stakeholders	Intervention/ Recommendation	Outcome(s)
Neighborhood exposure to waste incinerator & public concern	Potential elevated cancer risk for neighborhood inhabitants	Métropole Nice CA, Alpes Maritimes Department, Regional Health Agency, Nice University Hospital, Neighborhood representatives	Surveillance in collaboration with civil society organizations	Cancer registry, geo localized statistics
Lack of adequate medical care for the elderly	The complexity of care requires integrated services	Alpes Maritimes Department, Regional Health Agency, Nice University Hospital, all local health networks, civil society organization representing the elderly	Integrated, coordinated care to help the elderly stay in their own home	"C3S"—Dedicated center for health and social support (Centre de soutien santé social)
Medical desertification in rural areas	Financial compensation does not suffice to motivate physicians	City of Nice, Métropole Nice CA, Alpes Maritimes Department, Nice University Hospital, all local health networks, GP representatives	Develop tailored marketing policies to enhance living conditions in rural areas	Improved access to healthcare in rural areas (expected).
Hospital bed saturation post COVID-19	Follow-up of hospitalized COVID-19 patients can be carried out at home	Regional Health Agency, Nice University Hospital, "C3S", patient representatives	Dedicated human resource from "C3S" to speed up hospital discharge	Saturation problem resolved
High prevalence of obesity in young children in socially disadvantaged neighborhoods	A wide range of factors across a child's everyday life contributes to overweight and obesity	City of Nice, Métropole Nice CA, Alpes Maritimes Department, Nice University Hospital, Ministry of Education, Civil Society Organizations	360° approach to healthy lifestyle at neighborhood level (modelled on Amsterdam Healthy Weight Approach)	Improved BMI z-scores, healthier lifestyle habits at year 5 (expected)

Arguably the principle hurdle which the Arena has faced time and time again is maintaining the horizontal approach to problems in a country where the model of governance is overwhelmingly top-down. If constant efforts are not made to keep the balance among stakeholders and maintain fluid cross-over as well as top-down-bottom-up processes, initiatives will fall flat or only partially reach their objectives.

The COVID-19 pandemic has once more highlighted the impact of social inequities on health outcomes (27). Solutions to address the consequences of such inequities must be based on evidence and involve actors beyond the health system. Yet policy interventions based on evidence entail huge efforts to harness available knowledge, share it, overcome conflicting views and priorities, and translate it into action.

We believe that the Open Arena for Public Health can serve as a model for ensuring ongoing exchange and answers to complex health challenges at community level, allowing change and innovation to come about as a result of collective intelligence and ongoing policy dialogues.

Author contributions

CP contributed to the conception and critical revision of the article. MB contributed to the conception of the article and was responsible for its drafting. LB contributed to the conception and critical revision of the article. All authors contributed to the article and approved the submitted version.

Acknowledgments

We would like to acknowledge the contribution of Jean Rochon (1938–2021) to the concept and construct of the Espace Partagé de Santé Publique, for which he acted as international advisor.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

1. Totten MK. Collaborative governance the key to improving community health. Available at: https://trustees.aha.org/articles/995-collaborative-governance-key-to-community-health.

2. Hoekstra F, Mrklas KJ, Khan M, McKay RC, Vis-Dunbar M, Sibley KM, et al. A review of reviews on principles, strategies, outcomes and impacts of research partnerships approaches: a first step in synthesising the research partnership literature. *Health Res Policy Syst.* (2020) 18(1):51. doi: 10.1186/s12961-020-0544-9

3. Ortiz K, Nash J, Shea L, Oetzel J, Garoutte J, Sanchez-Youngman S, et al. Partnerships, processes, and outcomes: a health equity-focused scoping meta-review of community-engaged scholarship. *Annu Rev Public Health.* (2020) 41:177–99. doi: 10.1146/annurev-publhealth-040119-094220

4. Harting J, Kruithof K, Ruijter L, Stronks K. Participatory research in health promotion: a critical review and illustration of rationales. *Health Promot Int.* (2022) 37(Supplement_2):ii7–20. doi: 10.1093/heapro/daac016

5. Jongen CS, McCalman J, Bainbridge RG. The implementation and evaluation of health promotion services and programs to improve cultural competency: a systematic scoping review. *Front Public Health*. (2017) 5:24. doi: 10.3389/fpubh.2017.00024

6. Duke M. Community based participatory research. Oxford research encyclopaedias. Anthropology. doi: 10.1093/acrefore/9780190854584.013.225

7. EVIPNet. Policy dialogue preparation and facilitation checklist. Available at: https://www.euro.who.int/__data/assets/pdf_file/0017/323153/EVIPNET-PD-preparation-facilitation-checklist.pdf.

8. Mitchell P, Reinap M, Moat K, Kuchenmüller T. An ethical analysis of policy dialogues. *Health Res Policy Syst*. (2023) 21(1):13. doi: 10.1186/s12961-023-00962-2

9. WHO begins subregional policy dialogues to fight obesity. Available at: https://www.who.int/europe/news/item/24-06-2022-who-begins-subregional-policy-dialogues-to-fight-obesity (Consulted 29.03.23).

10. Leslie K, Bartram M, Atanackovic J, Chamberland-Rowe C, Tulk C, Bourgeault IL. Enhancing the capacity of the mental health and substance use health workforce to meet population needs: insights from a facilitated virtual policy dialogue. *Health Res Policy Syst*. (2022) 20(1):51. doi: 10.1186/s12961-022-00857-8

11. Damani Z, MacKean G, Bohm E, DeMone B, Wright B, Noseworthy T, et al. The use of a policy dialogue to facilitate evidence-informed policy development for improved access to care: the case of the Winnipeg central intake service (WCIS). *Health Res Policy Syst*. (2016) 14(1):78. doi: 10.1186/s12961-016-0149-5

12. Shaw J, Jamieson T, Agarwal P, Griffin B, Wong I, Bhatia RS. Virtual care policy recommendations for patient-centred primary care: findings of a consensus policy dialogue using a nominal group technique. *J Telemed Telecare*. (2018) 24(9):608–15. doi: 10.1177/1357633X17730444

13. Dovlo D, Monono ME, Elongo T, Nabyonga-Orem J. Health policy dialogue: experiences from Africa. *BMC Health Serv Res*. (2016) 16 Suppl 4(Suppl 4):214. doi: 10.1186/s12913-016-1447-x

14. Akhnif EH, Hachri H, Belmadani A, Mataria A, Bigdeli M. Policy dialogue and participation: a new way of crafting a national health financing strategy in Morocco. *Health Res Policy Syst*. (2020) 18(1):114. doi: 10.1186/s12961-020-00629-2

15. Bailly L, Jobert T, Petrovic M, Pradier C. Factors influencing participation in breast cancer screening in an urban setting. A study of organized and individual opportunistic screening among potentially active and retired women in the city of nice. *Prev Med Rep*. (2022) 31:102085. doi: 10.1016/j.pmedr.2022.102085

16. Eisinger A, Senturia K. Doing community-driven research: a description of Seattle partners for healthy communities. *J Urban Health*. (2001) 78(3):519–34. doi: 10.1093/jurban/78.3.519

17. Metzler MM, Higgins DL, Beeker CG, Freudenberg N, Lantz PM, Senturia KD, et al. Addressing urban health in detroit, New York City, and Seattle through community-based participatory research parterships. *Am J Public Health*. (2003) 93 (5):803–11. doi: 10.2105/AJPH.93.5.803

18. Israel BA, Coombe CM, Cheezum RR, Schulz AJ, McGranaghan RJ, Lichtensetin R, et al. Community-based participatory research: a capacity-building approach for policy advocacy aimed at eliminating health disparities. *Am J Public Health*. (2010) 100(11):2094–102. doi: 10.2105/AJPH.2009.170506

19. Touboul P, Valbousquet J, Pourrat-Vanoni I, Alquier MF, Benchimol D, Pradier C. Comment adapter l'environnement pour favoriser la marche des seniors? Une étude qualitative [adapting the environment to encourage the elderly to walk: a qualitative study]. *Sante Publique*. (2011) 23(5):385–99. French. doi: 10.3917/spub.115.0385

20. Bailly L, d'Arripe-Longueville F, Fabre R, Emile M, Valbousquet J, Ferré N, et al. Impact of improved urban environment and coaching on physical condition and quality of life in elderly women: a controlled study. *Eur J Public Health*. (2019) 29 (3): 588–93. doi: 10.1093/eurpub/cky192

21. Brookman-Frazee L, Stahmer AC, Lewis K, Feder JD, Reed S. Building a research-community collaborative to improve community care for infants and toddlers at risk for autism spectrum disorders. *J Community Psychol*. (2012) 40 (6):715–34. doi: 10.1002/jcop.21501

22. Bors P, Dessauer M, Bell R, Wilkerson R, Lee J, Strunk SL. The active living by design national program: community initiatives and lessons learned. *Am J Prev Med*. (2009) 37(6):S313–21. doi: 10.1016/j.amepre.2009.09.027

23. Mccreedy M, Leslie JG. Get active Orlando: changing the built environment to increase physical activity. *Am J Prev Med*. (2009) 37(6):S395–402. doi: 10.1016/j.amepre.2009.09.013

24. Van Holle V, Van Cauwenberg J, Van Dyck D, Deforche B, Van de Weghe N, De Bourdeaudhuij I. Relationship between neighborhood walkability and older adults' physical activity: results from the Belgian environmental physical activity study in seniors (BEPAS seniors). *Int J Behav Nutr Phys Act*. (2014) 11(1):110. doi: 10.1186/s12966-014-0110-3

25. Cerin E, Sit CH, Barnett A, Johnston JM, Cheung M-C, Chan W-M. Ageing in an ultra-dense metropolis: perceived neighborhood characteristics and utilitarian walking in Hong Kong elders. *Public Health Nutr*. (2014) 17(1):225–32. doi: 10.1017/S1368980012003862

26. Kerr C. Education for management in the new public health. *J Health Adm Educ*. (1991) 9(2):147–61.

27. Horton R. Offline: COVID-19 is not a pandemic. *Lancet*. (2020) 396(10255):874. doi: 10.1016/S0140-6736(20)32000-6

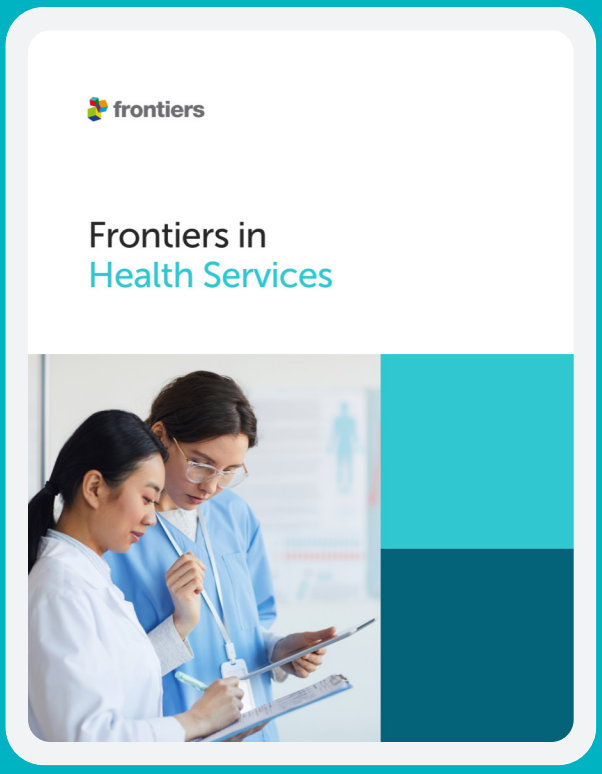
Frontiers in Health Services

Innovation that informs the design and delivery of health care.

A multidisciplinary journal that explores health services, from policy to implementation, from cost allocation to health information systems. It aims to help health systems be more efficient and to improve experiences and outcomes for patients.

Discover the latest Research Topics

See more →



Frontiers

Avenue du Tribunal-Fédéral 34
1005 Lausanne, Switzerland
frontiersin.org

Contact us

+41 (0)21 510 17 00
frontiersin.org/about/contact