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RESEARCH ARTICLE

If you build it, they may not come: Understanding factors influencing use of a community resource referral technology

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Abstract

Objective: Identify factors affecting the use of a community resource referral platform among local community-based organizations (CBOs) and test strategies to increase platform use.

Data Sources and Study Setting: Data sources included platform usage data and semi-structured interviews. The study took place in a small city in the Northeastern United States from 2020 to 2022.

Study Design: We analyzed platform data and conducted interviews with local organizations and organizations in other communities to understand barriers to CBOs' use of the referral platform and identify strategies that might increase use. We then tested 4 strategies and assessed impacts via time trend analysis of platform usage and qualitative interviews.

Data Collection/Extraction Methods: Platform usage data were obtained from the platform. Semi-structured interviews were conducted with staff and leaders of 36 local CBOs and 9 external organizations.

Principal Findings: Four years after launch, platform use remained relatively low. None of the tested strategies (data insight reports, a referral hub, tailored training, and a communication campaign) noticeably increased platform use. The main barrier to the use of the platform was the lack of perceived usefulness, mostly because existing processes for identifying resources and referring clients worked well enough and because many organizations were already required to use a client management or referral tool. Additional barriers included the lack of comfort with and, in some cases, active dislike of e-referrals, and lack of comfort with technology tools overall. Organizations that were most likely to find the platform useful and to use it were those that provided referrals for a wide range of needs and whose staff were not already familiar with local resources.

Conclusions: Organizations seeking to implement referral platforms should not assume that local CBOs will automatically take up these platforms. For these platforms to succeed, much more attention needs to be paid to ensuring the platforms provide value to the CBOs they seek to engage.

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KEYWORDS

cross-sector care coordination, health and human services integration, health-related social needs, referral platforms, technology adoption

What is known on this topic

- Health care organizations are increasingly implementing community resource referral platforms to help connect patients to local social service organizations in order to address patients' social risks.
- Despite widespread interest in these platforms among health care organizations, implementation is often challenging.
- In particular, health care organizations often struggle to engage local CBOs, which are essential if these tools are to be effective at facilitating referrals.

What this study adds

- We found that after 4 years of efforts to support organizations in a small city to use one of these platforms, including testing 4 user-suggested strategies to increase engagement, only 7% of trained users in 25% of trained organizations used the platform.
- Low use was principally due to the fact that the platform did not present an improvement upon organizations' existing referral processes and to organizations' lack of time and resources to implement a nonessential tool.
- For these platforms to succeed, much more attention needs to be paid to ensuring the platforms provide value to the CBOs they seek to engage.

1 | INTRODUCTION

Health care and public health organizations are increasingly interested in improving population health by facilitating patients' access to nonmedical resources such as food and housing.¹⁻⁴ As part of these efforts, many health care organizations, particularly large health care systems and payors, have contracted with third-party software vendors that provide up-to-date directories of local social services resources and the ability to make and track electronic referrals to these resources.⁵⁻⁹ Examples of such community resource referral platforms include findhelp (formerly Aunt Bertha), NowPow, Unite Us, and WellSky (formerly Healthify), among others.^{4,5} According to one estimate, these companies had \$466 million in funding and a total valuation of \$2.34 billion as of July 2021.¹⁰

Health care organizations are attracted to these platforms because they provide a way to send electronic referrals to social services organizations in the community and to be able to track whether patients/members receive services.^{11,12} However, despite enthusiasm for these platforms among health care organizations, early implementation efforts are raising questions about whether these platforms will live up to their promise. A major challenge is that the platforms' "e-referral" functionality is entirely dependent on community-based organizations (CBOs) using the platforms to receive e-referrals and respond to them. Previous research has found that healthcare organizations experience challenges in convincing CBOs to use these platforms.¹¹⁻¹⁵ However, it is not yet clear why that is, and what can be done about it. As the health sector continues to invest in these

platforms, and as social risk metrics continue to be added to quality and accreditation efforts both nationally and at the state level,¹⁶⁻²¹ there is an urgent need to better understand the CBO perspective on these platforms.

To fill this gap, we conducted a mixed methods study of the implementation of a community resource referral platform, NowPow, in a small city in the Northeastern U.S. between 2020 and 2022. The goals of this study were to understand CBOs' perspectives on these platforms and test strategies to increase NowPow use.

2 | METHODS

This study took place in a small city in the Northeast of the United States (pop. 84,000) where a local nonprofit community health improvement organization (CHIO) began implementing the NowPow referral platform in February 2019 in response to the need among local service providers for an infrastructure to facilitate cross-sector referrals and service coordination. NowPow is a software tool that provides a regularly updated, searchable community resource directory and the ability to capture data about clients' needs, generate a shareable list of resources tailored to clients' needs, send electronic referrals between organizations to initiate service requests, and capture whether referrals lead to service receipt. (NowPow was acquired by Unite Us during the course of this study but continued to be implemented locally through the duration of this study.) To launch NowPow, the CHIO worked with local social service and healthcare organizations to develop agreements and protocols for how NowPow

would be used. Based on apparent enthusiasm for the tool, the CHIO decided to subsidize the cost of NowPow so that it would be free to all local organizations. Despite these efforts, 1 year into implementation, few of the 27 organizations that had committed to adopting the tool when it launched were using it regularly.

To better understand why uptake of the tool was not as high as anticipated and to test strategies to increase uptake, the CHIO partnered with researchers (CF and YC) for a mixed methods study that ran from spring 2020 to fall 2022. The study occurred in two phases: a formative stage, during which we explored facilitators and barriers to platform use and identified strategies to increase uptake, and an intervention phase, in which we tested 4 strategies to increase uptake.

2.1 | Formative phase

In the first phase, we conducted 28 key informant interviews with frontline staff and leaders at 16 Trenton CBOs to understand facilitators and barriers to platform use and to identify possible engagement strategies to test in phase 2. We selected organizations to interview that represented different levels of baseline platform use and different sectors and sizes. Participating organizations represented a wide spectrum of sectors, including food assistance, housing services, family services, health care, county agencies, and immigrant services. Organizations had to have been onboarded to use NowPow at least 6 months prior to the interviews. We also interviewed organizations that had declined to participate in NowPow. We sought to interview at least 1 manager and 1 front-line staff member at each organization. Interviews asked about when and how organizations and staff were using NowPow (if they were), how the tool could be helpful to their organization, facilitators, and barriers to tool use, what supports the CHIO could provide to help them use the tool more, and whether financial incentives might be helpful.

To help us identify engagement strategies that had proved successful in other places, we also interviewed staff at 9 organizations that had implemented similar referral platforms in other locations. These external organizations were identified through contacts from a related study conducted by two of the authors,¹¹ suggestions from the project advisory committee, and suggestions from NowPow. Organizations to interview were again selected to represent a variety of platforms and approaches to platform implementation. The external platform implementation sites ranged in size from neighborhoods to counties. Three of the organizations were health care organizations, 5 were nonprofits, and 1 was a county agency. Two of the organizations were focused just on one social need (food security), while the others addressed a wide range of needs. Three organizations had developed their own platforms (with the help of software vendors), while the rest used an off-the-shelf tool (either NowPow, Unite Us, or Care Coordination Systems.)

All interviewees were offered \$100 for their participation. All interviews were audio recorded on Zoom and transcribed using [Rev.com](#). We used a rapid turn-around method for evaluation-focused

qualitative data analysis in order to efficiently reduce data and generate matrix views across interviews.²² Three of the authors (YC, JB, and CF) extracted interview data using a standardized template that encompassed interview topics (for Trenton CBOs: current and/or anticipated use of NowPow, value, barriers, facilitators, and desired supports; for external organizations: barriers and facilitators, recommended engagement strategies). Then, for each organization, we created a case study memo that summarized how elements of the participant's organizational context related to their interview responses. The contents of these analytical memos were then further summarized into a matrix view that enabled the identification of categories of barriers and facilitators as well as desired supports and potential engagement strategies. Internal and external interviews were analyzed separately.

2.2 | Intervention phase

The second phase involved selecting and testing strategies to increase the use of the platform. Potential engagement strategies to test were identified based on the internal and external interviews as well as suggestions from our advisory committee and review of the Unified Theory of Acceptance and Use of Technology (UTAUT) (which draws on the Technology Acceptance Model,²³ Innovation Diffusion Theory,²⁴ and other models of technology and intervention adoption).²⁵ This resulted in 7 potential strategies: data insight reports, endorsements from highly-regarded local agencies/CBOs, grants requiring platform use, a communications campaign, a CHIO-staffed referral hub, reimbursement for staff time to attend training, and a more intensive and tailored onboarding training. The 7 strategies were narrowed down to a feasible number to test (4) through a ranking survey completed by 61 individuals from 33 local CBOs (see Appendix). The four tested strategies, data insights reports, a referral hub, tailored training, and a communications campaign, are described in Table 1. They were implemented between June 2021 and April 2022. Strategies were staggered in time and administered to different sets of CBOs both for feasibility and to make it easier to differentiate their impacts. We evaluated strategies based on the degree to which exposed organizations engaged with the strategies (e.g., opened emails, participated in trainings) as well as whether the strategies affected platform use.

2.2.1 | Platform usage analysis

Platform usage data, downloaded from the platform's online reporting portal, included the monthly numbers of logins, searches, sharing of resource information, and e-referrals conducted through the platform by local organizations from February 2019 (when the platform launched) to February 2023 (11 months after the end of the last tested strategy). Strategy impacts were assessed by comparing the monthly number of NowPow logins per user prior to and after exposure to the strategy, as logins are a prerequisite to all other platform activities. Where possible,

TABLE 1 Details of 4 strategies tested to increase use of a community referral platform in a small Northeastern city.

Strategy	Description ^a	Goals	Relevant UTAUT/TAM concepts ^b	Implementation dates	Number and types of exposed organizations
Monthly data insights	CBO-specific reports summarizing platform use as well as the categories of needs clients were assisted with. Also included comparisons to other organizations.	To remind organizations about the platform, show how platform data could support program evaluation, grant reporting, or other needs, and to use peer pressure to increase use.	Performance expectancy/ Perceived usefulness Social influence	June 11, 2021–September 28, 2021	10: 5 multi-social-service providers, 1 environmental health group, 1 nursing home, 1 meal delivery provider, 1 school system, 1 community health center
Centralized referral hub	CHIO navigators provide navigation for clients from other CBOs	Make it easier for CBO staff to use NowPow: with the hub, all they had to do is refer clients to the hub and the hub navigator takes it from there (through NowPow).	Effort Expectancy/ Perceived ease of use	July 26, 2021 (org 1) and September 13, 2021 (org 2)–October 31, 2021	3: 1 homeless service provider, 1 church meal program, 1 youth-serving program
Intensive tailored trainings	More intensive and tailored training and onboarding. (Details in Appendix)	Help CBO leadership and users understand platform functionalities and value. Enhance user confidence in using the tool.	Performance expectancy/ Perceived usefulness	August 4, 2021–January 4, 2022	5: 3 social service providers for families or youth, 1 school, 1 medical daycare
Communications campaign	Email campaign highlighting NowPow's value to the community, including through user testimonials.	Increase awareness of and interest in the tool.	Effort Expectancy/ Perceived ease of use Performance expectancy/ Perceived usefulness Social Influence	January 19, 2022–March 20, 2022	55 (all onboarded organizations)

^aMore details on each strategy can be found in Appendix 2 in the Supplementary Materials.

^bThis identifies the concepts from two models of technology acceptance that each strategy helps to address. UTAUT: Unified Theory of Acceptance and Use of Technology (Marikyan D, Papagiannidis S. Unified Theory of Acceptance and Use of Technology: A review. In: *TheoryHub Book*. Accessed March 12, 2023), and TAM: Technology Acceptance Model (Marangunic, N., & Granic, A. (2015). Technology acceptance model: A literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95.)

changes over time in the intervention organizations were compared with changes over time among users in organizations who had not been exposed to any strategy (i.e., a difference-in-differences analysis). T-tests were used for hypothesis testing.

2.2.2 | Qualitative analysis

We complemented the analysis of platform data with semi-structured interviews of staff and managers at 21 organizations that were exposed to the strategies. Interviews asked about participants' awareness of the strategy, perceived usefulness, and any perceived impacts the strategy had on their organization's use of the platform. As with phase 1 interviews, all interviews were conducted and recorded on Zoom, transcribed using Rev.com, and coded using Dedoose. An initial codebook was piloted on 3 interviews with two coders (JB and YC); once the codebook was finalized, one study team member (JB) coded the rest of the interviews, with weekly meetings with YC to resolve coding questions. JB, YC, and CF subsequently summarized and analyzed excerpts by code to distill key themes in the interview data.

A project Advisory Committee composed of national experts on health care-CBO partnerships and local community stakeholders helped inform the project. The study was reviewed by the WCG

Institutional Review Board and determined to be a quality improvement study and not human subjects research.

3 | RESULTS

3.1 | Platform use

Between February 2019 and February 2023, a total of 55 organizations were onboarded to the platform (i.e., trained in how to use NowPow and given access to the platform) (Figure 1). The number of "active organizations", or organizations with at least one user logging in at least once in a month ranged from 3 in February, 2019 to a high of 26 in March, 2022 (Figure 1). On average, 38% of onboarded organizations were active in any given month. Although the number of individuals trained to use the platform grew to 513 by January 2023 (Figure 2), on average only 10% of trained users were active in a given month. Active users logged in on average 4.3 times per month. The most common activities on the platform were sharing information about an organization with a client (which happened on average 246 times per month from February 2019 to February 2023) and searches (241.5 per month). By contrast, on average only 8 electronic referrals were sent per month and only 2.3 screenings were conducted per month.

FIGURE 1 Trends in Numbers of Local Organizations Onboarded to Use the Platform and Actively Using It,^a 2019–2023 (a. Actively using it was defined as having at least one user in the organizations that logged in at least once that month. Onboarding of new organizations stopped in April 2022 as a result of the purchase of NowPow by Unite Us.)

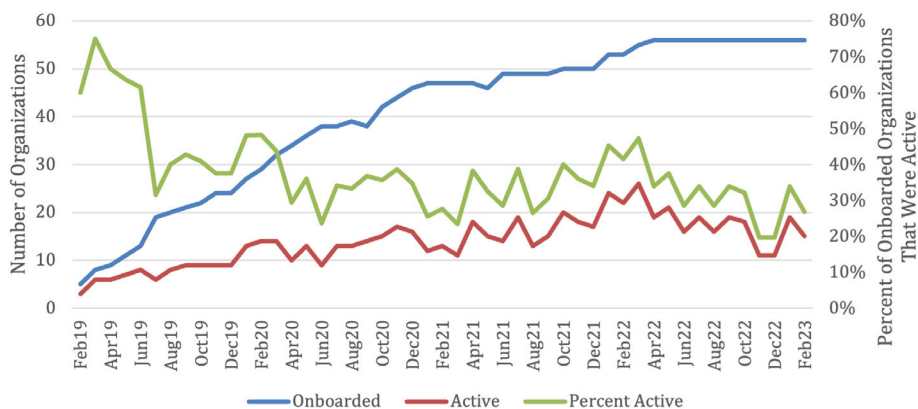


FIGURE 2 Trends in Numbers of Trained and Active^a Platform Users, 2019–2023 (a. Active was defined as having logged in at least once that month.)

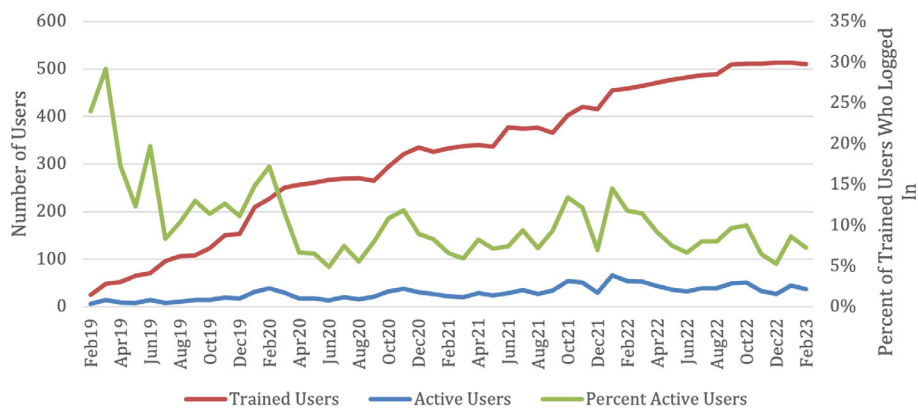


TABLE 2 Barriers to local organizations' use of a platform, based on semi-structured interviews with staff and leaders.

Barrier category	Barrier Details	Sample Quotes
<i>Lack of need for the platform</i>	Existing referral processes work well enough	I frankly don't get a sense that we make a huge use of it because, like I said, we know most of these organizations. We are already involved with a lot of these organizations, or at least the ones that we use.
	Most users we spoke with who made referrals already had lists of organizations they trusted and established processes to make referrals, for example via email, phone, or fax, that they had developed and honed over time. As a result, NowPow did not provide enough added value to justify the time needed to learn and integrate it into their workflows.	Well, I don't use it, not because there's anything wrong with it, but I never really sat down to figure out how to use it. I'm just so busy and it just slips my mind, it slips past me and I have a handwritten list of places that I can send clients to.
Already required to use another client management technology	In addition, a number of organizations used client management platforms (e.g., HMIS), often as a requirement of funding that made NowPow feel duplicative.	One of the biggest things was the duplication of effort because HMIS, we actually have to set days aside, we're supposed to put information in, I think, within three days or so. My staff actually has to set a day aside sometimes to be able to update HMIS, do these tasks, run these reports.
Don't make or receive referrals	A number of organizations neither made referrals (or made them too infrequently) nor needed to receive referrals to their services.	We don't really do case management. And I think that that tool is really good for someone who would be responsible for doing case management.
<i>Resistance to the platform</i>	Dislike of e-referrals	Some of my [community members], they'll ask me, 'Well, [have] you ever been there? Have you talked to anybody? You know anybody?' You know? And then I don't want to send them and they go, 'They couldn't help me. They're giving me a double-talk'.
Low comfort with technology	Some organizations, particularly smaller organizations, had staff who were not very comfortable with technology. This limited platform adoption.	We seem to average age 70 or something like that. I'm not kidding. One of our religious sisters didn't renew her contract and

TABLE 2 (Continued)

Barrier category	Barrier Details	Sample Quotes
Platform limitations	Some interviewees who had used the platform found that it didn't quite meet their needs. Limitations included lack of resources for specific subpopulations (e.g., immigrant populations), lack of coverage outside of the city of Trenton, and lack of organizations accepting e-referrals.	I think she just turned 82. So she was not someone who was going to embrace NowPow.
New tool fatigue/Concern that the tool wouldn't be around for long	Several interviewees mentioned that they felt overwhelmed by the number of technology tools they were asked to use and couldn't add another one. A few users also mentioned that they had heard of other similar tools and weren't sure that NowPow was "the one" that would stick around.	The problem seems be, it was narrow based. One, it was just in the Trenton area. Two, the resources weren't as wide based as I had imagined. It was okay, but it just wasn't enough resources. So it was like kind of double input, Wufoo and Salesforce. And then the city, I can't remember what their thing is, Smartsheet? And then the state uses HeySwap. So it was just like my brain was full. So when [manager] mentioned another thing, it was just like, 'Oh come on, dude'.
<i>Barriers unrelated to the platform</i>		
Lack of time and capacity / High staff turnover	A number of users mentioned the lack of time or staff capacity needed to learn how to use the tool.	And at the time that we started, [...] we didn't have a director of marketing [...] and [making a NowPow profile] really would have been her job, but I had staff doing it and they just could not pull it together to be able to get everything that we encompass into NowPow and it wasn't the biggest priority for us at the time.
Resistance to change	Several users also mentioned the challenges associated with getting staff to change processes.	Any time there is change on the table, you are going to get push-back. And that's just the reality of the human experience. They're used to how they do things, they don't want it to change.
COVID impacts	A number of organizations mentioned that they had just learned how to use the tool when COVID hit, and in the chaos that followed, were not able to focus on using this new tool.	And you really need to act on the knowledge [from the platform training] and so much has happened that things have been just wiped out. I doubt if anybody knows how to sign on.

Abbreviation: HMIS: Homeless Management Information System.

3.2 | What organizations valued about the platform

CBO interviewees identified the resource directory as the most useful platform functionality as it filled a clear need: identifying resources to help address clients' needs. Users highly appreciated having access to a regularly updated directory of resources so that they did not have to spend time compiling a list of resources and keeping it up-to-date. Users also appreciated having a variety of ways to easily share resource information with clients (e.g., through a printout, a text, or an email) and being able to translate that information: "So that [NowPow] was a huge help because the client can receive the information through text message, and they were able to read in Spanish and check the organization name, address, hours, what documents to bring, what hours they are working."

Although only a few interviewed users took advantage of the platform's e-referral functionality, those who did appreciated that it saved them time and helped ensure that the partner agency would follow up with their client. As one user shared: "Whenever I need a service for my clients, I'm always looking to see if they accept referrals because I think that's the easiest way to go about it [...] I wish all organizations could have that little button on there so that I can just make a referral and that can be quicker." Another user highlighted the time e-referrals saved them on the receiving end: "[with the e-referral], I now have all that demographic information... So we don't have to go through what is usually a 30 to 60 minute process for intakes." Another mentioned "I'm not playing phone tag with somebody to give them an update on whether or not I was able to visit someone [...] so it really streamlines it." CBOs did not use the social risk screening tool as it was time-consuming and staff generally were pressed for time when clients came to them asking for help.

3.3 | Barriers to platform use

Barriers to the use of the platform fell in three categories: lack of a need for the platform, resistance to the platform, and barriers unrelated to the platform.

3.3.1 | Lack of need for the platform

The most common reason for not using NowPow, or not using it frequently, was a lack of perceived need for the platform, which occurred for three main reasons. The most common reason was that organizations felt their existing processes for making referrals—typically keeping their own lists of helpful resources and contacting organizations directly—worked well enough, especially for individuals who had worked in the community for a number of years and were familiar with available resources. For these participants, the platform did not provide enough of an improvement on their current practices to make it worthwhile to learn to use a new tool. The second reason

was that a number of organizations were already required to use another technology for managing clients and/or referrals. For these organizations, NowPow was redundant and using it required duplication of effort, for example, double data entry. Even in cases where NowPow was considered to be a superior tool in terms of functionality, organizations did not have the capacity to use a redundant tool. Finally, there were also organizations that had no need for the tool because they did not regularly refer clients to external resources or receive referrals. Examples include a mental health provider and a community-organizing nonprofit. Illustrative quotes are shown in Table 2.

3.3.2 | Resistance to the platform

The second category of barriers encompasses concerns or resistance to the tool itself. Here, the most common concerns related to the e-referral functionality. Several interviewees expressed concerns about referring patients to organizations and/or individuals they had not vetted, especially for vulnerable clients. Others preferred calling the organizations so they could obtain a response right away, especially for clients in crisis ("with me it would just be [...] to contact them by phone on the spot [...] to make sure we don't lose a minute") or because they felt the referrals would be more effective if they helped facilitate the connection (e.g., for clients with language barriers or who might not reach out on their own). A few interviewees also shared concerns about the privacy of client information entered into the platform. Finally, several users mentioned that they preferred to have clients be the ones to reach out to access resources to help develop client self-efficacy. For all these reasons, e-referrals were not an attractive feature for a sizable number of interviewees.

Several other users did not prioritize using NowPow because, having seen other similar tools come and go, they were not sure the tool would be around for long. These users wanted to know that key community organizations and county offices were endorsing the tool before committing to using it themselves. Another barrier to tool use for some organizations was the lack of tech-savviness among staff. This seemed to be particularly the case for smaller organizations. Finally, some participants who had used the platform found that some of the platform's functionalities were not as robust as they had hoped. For example, the resource directory did not always have the resources they were looking for. Additionally, a couple of participants brought up that not enough organizations accepted e-referrals, limiting the utility of that functionality.

3.3.3 | Barriers unrelated to the platform

Finally, interviewees also highlighted barriers to using the platform that were unrelated to the tool itself. The most prominent non-tool-related barrier was the lack of time to learn the tool and incorporate it into daily workflows. This was amplified by relatively high staff turnover,

which necessitated training of new staff in how to use the tool. General resistance to change was also a factor.

COVID also interrupted the uptake of NowPow. A number of organizations were just starting to use NowPow when the pandemic hit. Over half of the organizations we spoke with reported that the pandemic had made it harder for them to use the platform. Many client-facing programs shut down or changed in ways that limited one-on-one client contact. For example, a church that used NowPow during its weekly hot lunch suspended the meals, while a food pantry changed from a market model to prepacked boxes. With fewer client contacts, there was less need for a tool like NowPow. The pandemic also resulted in a surge of urgent client needs that CBOs rushed to address, meaning that service providers were often too pressed for time to use the platform. In addition, services were changing so rapidly that the platform resource directory was not able to keep up.

3.4 | Facilitators of platform use

Despite the relatively low use of the platform, we identified several characteristics that seemed to distinguish organizations and users who were more likely to use the platform and/or more enthusiastic about its value. Organizations that were most likely to use NowPow seemed to be organizations that were not already using another referral tool and who worked with clients who had a wide range of needs, such that staff were regularly helping clients with issues that were new to the staff. Staff who were most likely to want to use NowPow were new to the area and therefore were not already familiar with existing resources. One of the most enthusiastic users of NowPow was an out-of-town volunteer who helped refer soup kitchen clients to local resources. For her, the resource directory was hugely helpful since she was not already familiar with available resources. She also greatly appreciated the e-referral functionality as it allowed her to quickly make referrals and to track referral outcomes. Another NowPow booster was someone who had recently moved to the area and who had used and appreciated a similar community referral platform at her previous job. However, these users' enthusiasm for NowPow was the exception, not the norm, among our interviewees. When interviewees were asked whether small monetary incentives for using the platform would help increase use, the most common reaction was that staff should not be incentivized to use something by a financial incentive if it is not in the client's interest: "You're making the referral for the right reason, because the person needs that, and not sort of stacking the deck there to get any kind of incentive."

3.5 | Insights from external platform implementations

The external organizations we interviewed all experienced similar challenges with engaging organizations to use platforms, including the lack of perceived utility, competing priorities, and duplication with existing tools. Platform use seemed to be highest when there was a

very clear use case for it; for example, when organizations were paid for providing services and they received client referrals for those services through the platform, or when it was being used by community health workers as part of implementing the Pathways Community HUB Model.²⁶ Local nonprofit or county agencies seemed to have an easier time getting organizations to use the platform compared with health care organizations.

Interviewees suggested several ways to boost platform use. To address lack of perceived value, two organizations recommended investing in staff who could engage with each organization to help them identify the platform's value to their organization and establish how to fit the platform into their workflows. This was time-consuming but as one interviewee put it: "Individual organizational engagement was, and has been, the ticket." Organizations also recommended starting implementation with existing networks of organizations that are already collaborating with each other and for whom the platform could provide immediate value. In one community, the implementing organization purposely focused first on a central hub organization that already made a lot of referrals. To help build momentum, several organizations recommended focusing first on trusted organizations that could then influence others to use the tool as well. Another external implementer felt strongly that their success with the platform was because they were not using the tool as a data collection mechanism, but rather as a tool used by centralized navigators to provide cross-organization care coordination. They recommended a shift in thinking from "We're an agency, and we need to know what happens" to "People get stuck in complicated systems of care and they need support". Several organizations mentioned the importance of engaging all potential users in the tool implementation process from the beginning. Nearly all organizations we spoke with highlighted the need to provide ongoing training as well as regular nudges and reminders about the tool, for example, weekly emails with tips and tricks. One organization felt their success was partially due to their being very responsive to user comments about the tool. Finally, nearly all organizations felt use would be greater if the tools could be better integrated with existing client management systems (e.g., through single sign-on or direct integration). When asked about financial incentives or supports for using the platform, most interviewees did not feel that would be sustainable. One organization had provided grants (\$30,000 over 2 years) that were intended to help defray the costs of learning how to use the tool. However, the grants were not effective in supporting organizations to use the tool.

3.6 | Impacts of engagement strategies

There were no statistically significant differences in platform logins between the intervention organizations and controls for any of the engagement strategies (See Appendix 3). Monthly data insights reports had little impact partially because few recipients opened them: on average, reports were only opened by 3 out of 10 recipients. Among those who opened the reports, the information was not compelling enough to lead to increased use. Despite considerable efforts

to train three organizations to use the referral hub, none were able to successfully use it, likely due to competing demands for time and attention and staff turnover. Fifty-eight users in 5 organizations received the new tailored training approach. Despite positive feedback about the training, logins in those who received tailored training were no higher than in those who had been trained prior to the implementation of tailored training. The 7 emails that constituted the communication campaign were sent to 435–438 individuals in 53–55 organizations (numbers increased over the course of the campaign). Open rates varied from 26 to 38% but click rates were very low (between 0.5 and 3.6%). Individuals interviewed about the campaign mostly did not remember the emails (even when email tracking information indicated they had opened them).

Although none of the strategies led to noticeable changes in platform use, in examining the login data, we observed several peaks in login activity (Figure 2). Upon further investigation, it became clear that these peaks were caused by a produce prescription program that could only be accessed through a NowPow referral and that ran intermittently during the study period, as well as to a new substance use and mental health referral partnership between a health center and a social service organization that launched in August 2022.

4 | DISCUSSION

In this mixed methods study of the implementation of a community resource referral platform in a small Northeast city, we found that even after four years of concerted efforts to support organizations in using the platform, including testing four strategies to increase engagement, use remained relatively low, with only 37 individuals (7% of trained users) in 14 organizations (25% of onboarded organizations) using the tool in February 2023.

The main barrier to the use of the platform was the lack of perceived usefulness, mostly because existing processes for identifying resources and referring clients worked well enough and because many organizations were already required to use a client management or referral tool. Other barriers included lack of comfort with and, in some cases, active dislike of e-referrals, lack of comfort with technology tools overall, and gaps in the resource directory. Among organizations interested in using the platform to make e-referrals, the low number of organizations accepting e-referrals was also limiting.

Although the engagement strategies we tested were developed based on the recommendations of platform users, they failed to increase usage. Our follow-up interviews indicate that this was mostly because the strategies did not do enough to increase the perceived usefulness of the platform or to make it easier to use, the two main barriers identified in our user interviews. It is also possible that if we had had a longer time frame and more resources to perfect the strategies, we would have observed impacts. That being said, because of the pragmatic nature of this study, the results represent impacts that are reasonable to expect in a real-world setting.

The challenges we identified are consistent with several published reports of CBOs' experiences with community resource referral

platforms.^{14,15,27} Our findings also align with the Technology Acceptance Model (TAM)²³ and the more recent Unified Theory of Acceptance and Use of Technology (UTAUT),²⁵ which both identify the perceived usefulness (or in the UTAUT model, the performance expectancy) of technology as the strongest predictor of technology adoption. Our findings seem to differ from reports of the implementation of referral technology as part of the AmericaServes networks of coordinated services for veterans, which appears to have been more successful.^{28,29} One reason may be that the AmericaServes networks feature a coordination center that facilitates referrals between providers. As stated in a report that describes AmericaServes networks: "The importance of [the coordination center's] human navigators in referral systems cannot be overstated. Navigators act as the glue of the network."²⁸ This was also the perspective of one of the external organizations in our study. Although the referral hub strategy in our study attempted to provide this element, it is possible that the hub was not offered to enough organizations for it to be of value. Further research should investigate the value of centralized navigators in the implementation of referral platforms.

Our findings have important implications for the many health care organizations around the country that are relying on these platforms to facilitate connections to social services for their patients and members. We found that the platform did not provide enough intrinsic value to make it worthwhile for most of the local organizations in this city to use it, despite the fact that the CHIO employed two staff members dedicated to training and helping local organizations use it. It is important to underscore this finding, as many health care organizations are contracting to use these platforms under the impression that local organizations will easily and gladly use them. We did not find this to be true.

That these platforms are not intrinsically useful to most CBOs suggests that CBOs likely need a compelling reason to use referral platforms. Such reasons could include wanting to access services that are only accessible through a platform-mediated referral (as was seen with the produce box example in our study), or getting reimbursed for services provided through platform-mediated referrals (as was seen in one of our external community interviews). It is also possible that widespread adoption simply requires more time. Although we studied uptake over 4 years, the COVID pandemic substantially interrupted normal activities for over a year. The uptick in use of the platform for a substance abuse and mental health partnership towards the end of the study period may signal the beginning of the platform becoming more firmly embedded in local systems of care.

Although our formative interviews indicated that respondents were not interested in small financial incentives to use the platform, we did not ask about larger financial supports. The ubiquity of challenges related to understaffing and lack of staff time among the organizations we spoke with suggest that CBOs are likely to need financial support in order to offset the time needed to integrate a new tool into standard processes, especially for organizations that are already mandated to use another similar tool (or several). It is helpful to remember that health care organizations benefitted from a large influx of resources to facilitate the transition to electronic records systems

through the HITECH Act.³⁰ The social services sector has not. Investments of similar scale may be necessary to enable social services organizations to be able to participate in cross-sector data sharing.

Another way to facilitate the use of these platforms is through integration and interoperability—that is, by enabling organizations to share referral and client information across different client management systems. Although this is technologically and operationally challenging, there are signs that platform vendors may be moving in that direction. For example, 6 vendors signed an Interoperable Referrals Pledge in 2022.³¹ Integration would solve many of the challenges involved in the uptake of these platforms, but it remains to be seen whether and how quickly it can occur.

One final note of caution emerged at the end of our study from the fact that, while this study was in progress, two other programs within the CHIO bypassed NowPow to develop two stand-alone resource directories from scratch, one for food resources and one for baby resources.³² In both cases, the staff considered using NowPow but decided to create directories from scratch because NowPow did not provide the customization they wanted in terms of details about resources. This raises the question of whether commercial products can provide the customization that users may want for specific use cases.

While our findings are consistent with those seen in some other studies, it is still possible that they are not generalizable to other communities. In particular, this kind of referral platform may be much more useful in larger communities where CBO staff are less likely to already be aware of existing resources. It is also possible that implementation at a regional or state level may lead to broader adoption by increasing the utility of the platform and the pressure to adopt it.

Despite these potential limitations, it is clear from our study that most organizations in this small northeastern city were not interested or able to make use of a freely available community resource referral platform that provided a regularly updated resource directory and the ability to receive and make e-referrals and track referral outcomes, in spite of a local CHIO's best efforts to encourage and support use. If these platforms are to succeed in these kinds of contexts, they likely need to be integrated into programs, and local organizations likely need financial supports to overcome resource-related barriers to use.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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