



Data Across Sectors for Health Initiative: Formative Evaluation Report

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Setting the Stage for the Data Across Sectors for Health Evaluation

Time and again, findings from across the world have demonstrated that factors external to the health sector have a significant influence on health outcomes. Studies published by the World Health Organization (WHO) attributed only half of the worldwide reduction in child mortality from 1990 to 2010 to health sector investments. The remaining



reduction is attributed to investments in other sectors, such as education, women's rights, water and sanitation, and economic development. The other social sector investments served to enhance those in the health sectors (Kuruvilla et al. 2014). Another study estimates that medical care only addresses 10 to 20 percent of modifiable factors in health with socioeconomic factors addressing 40 percent, health behaviors addressing 30 percent, and the physical environment addressing 10 percent (Hood et al. 2016).

The correlation between socioeconomic factors and health is not a new concept or finding—cash transfer programs to families seeking well paid jobs to motivate healthier behaviors (WHO 2013) are a well-known example of socioeconomic interventions that aim to improve health. A review of studies from around the world also found that integrating the delivery of medical and social services is 10 times more effective than providing health services alone (WHO 2018).

These socioeconomic factors are broadly referred to as social determinants of health (SDOH), which include the conditions into which we are born, grow, work, live, and age. SDOH are particularly important when discussing pathways to achieve health equity. Addressing SDOH requires identifying the root causes of health outcomes, designing and implementing health improvement initiatives to address these root causes, and evaluating the success of these initiatives. Developing an evidence base related to SDOH requires reviewing, collecting, and analyzing data across sectors (WHO 2013).

However, data needed for assessing cross-sector interventions and outcomes have traditionally been separated within their respective social sectors. That is, these data rely on different data systems, formats, and specifications. Various factors hinder the sharing and harnessing of data across social sectors; these factors include data security concerns, incompatible data infrastructure, and fears of unanticipated and unconstructive use of data. These data-sharing limitations have restricted researchers' ability to generate information to support cross-sector planning and decision making.

To improve cross-sector data sharing, the Robert Wood Johnson Foundation (RWJF) launched the Data Across Sectors for Health (DASH) initiative in 2014. The initiative includes cross-sector collaboratives across 29 states that have come together to share data to improve the health and well-being of their communities. This report presents preliminary evaluation findings for the DASH initiative.

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EXECUTIVE SUMMARY

Introduction. Data Across Sectors for Health (DASH) is one of several initiatives in the Robert Wood Johnson Foundation's (RWJF's) ongoing efforts to build a Culture of Health and promote health equity. DASH supports collaboratives of community organizations focused on cross-sector data sharing to address social determinants of health. As the initiative enters its second phase, its focus expands from providing support to 10 exemplar communities (DASH 1.0) to offering broader reach through a network of 125 community collaboratives connected through the *All In: Data for Community Health* online network (DASH 2.0). This network offers tools to support cross-sector data sharing within these collaboratives and provides a forum through which these communities can interact and learn from one another. This report summarizes findings from an interim formative evaluation of DASH 2.0. The formative evaluation used data from a landscape review, key informant interviews with DASH administrative staff and collaborative representatives from 18 case study communities and eight DASH 1.0 communities, and a network survey of representatives from 72 community collaboratives.

Participation in *All In* by community collaboratives with diverse characteristics. The types of organizations participating in *All In* were driven by the partner initiatives outreached, which included the AcademyHealth Community Health Peer Learning Program, the BUILD Health Challenge, the Colorado Health Foundation, New Jersey Health Initiatives, the Population Health Innovation Lab, and the Public Health National Center for Innovation. Overall, 102 of the 125 community collaboratives entered DASH 2.0 through one of these partner initiatives; the remaining 23 consisted of the original DASH 1.0 participants; organizations who received RWJF Community Impact Contracts – Strategic, Timely, Actionable, Replicable, Targeted (CIC-START) grants; and those that learned about DASH through other methods. In general, organizations within DASH community collaboratives were non-profit or local agencies distributed across 29 states and covering 21 social sectors. Participating community collaboratives ranged in data capacity (that is, their ability to process and use data) and were at different stages of cross-sector data sharing, from being in a planning phase to fully transferring information across organizations.

Use of resources and engagement with peers among participants. About a third of community collaboratives participating in *All In* have attended the annual *All In* National Meeting, have a project profile on the *All In* website, and have used cross-sector data-sharing resources found on the website. Another third of collaboratives also engaged with each other. Factors driving engagement included a strong organizational commitment to cross-sector data sharing and a champion willing to forward the work within an organization. Collaboratives interacted with each other the most when discussing topics related to laws and logistics around data sharing, as these topics represent the fundamental building blocks for cross-sector data sharing.

Initial results from cross-sector data sharing to identify trends and patterns at the community level and address social determinants of health. Some case study community collaboratives recounted specific stories related to the results of their data sharing to improve health equity. One collaborative's shared data revealed a disproportionate number of hospital

admissions among infants not enrolled in the Supplemental Nutrition Assistance Program, the Special Supplemental Nutrition Program for Women, Infants, and Children, or medical insurance. The collaborative then shared this data with their partners, who developed solutions to address this problem, which had previously been unrecognized. To address disparities in early childhood education, another collaborative used shared data to identify families with preschool aged children who were in unstable housing situations or facing evictions. This collaborative reached out to those families to facilitate their children's enrollment in preschool, as they likely face disproportionate barriers to preschool enrollment.

The DASH initiative's value to community collaboratives lies in its role as a convener, information resource, and provider of seed capital. Many of the 18 case study collaboratives indicated that participation in *All In* and, for some, financial support received, provided the motivation, knowledge, and resources needed to forge ahead in data sharing. *All In* also provided a bridge to other community collaboratives which enhanced cross-sector data sharing. In addition, CIC-START grants with a small amount of funding helped collaboratives defray the costs of staff time spent on data-sharing work.

Conclusion. The next phase of the evaluation will focus on further assessing the changes in community collaboratives' data sharing and outcomes and the contributions the DASH initiative has made to these changes during DASH 2.0. It will also explore sustainability of DASH and cross-sector data sharing in community collaboratives.

I. DATA ACROSS SECTORS FOR HEALTH INITIATIVE: PROMOTING A CULTURE OF HEALTH THROUGH CROSS-SECTOR DATA NETWORKS

Community information systems and multi-sector data are vital to identifying and monitoring the diverse drivers of health. Among the various health system stakeholders, communities are in a particularly unique position to identify and monitor nonclinical social determinants of health (SDOH), and launch nonclinical interventions to address these SDOH (O'Neil and Stagner 2019).

Recognizing the opportunities communities have to leverage data for health, the Robert Wood Johnson Foundation (RWJF) supports several initiatives to strengthen community-level information systems and the use of multisector data to improve health outcomes. One such initiative is Data Across Sectors for Health (DASH). Supporting DASH is part of RWJF's ongoing efforts to build a culture of health and promote health equity.

A. About DASH

The initial phase of DASH began in 2014 and focused on building cross-sector data-sharing capacity through the provision of intensive technical assistance (TA) to collaboratives that included community organizations coming together for this purpose. The DASH initiative was high-touch and its reach was focused on 10 exemplar community collaboratives. The goal of the initial phase of DASH was to help these 10 community collaboratives to make substantial and tangible progress with data sharing. In addition, RWJF hoped to identify and document lessons learned from these community collaboratives and eventually share them to support the scaling of best practices.

In response to its initial call for applications, RWJF received over 400 proposals, and ultimately selected 10 awardees. RWJF also established a DASH National Program Office (NPO) to lead the TA to DASH awardees and to administer the grant. These DASH 1.0 grantees received \$200,000 awards over an 18-month period from 2016 to 2017. Prior to the DASH 1.0 grant, most of the DASH 1.0 collaboratives already had working relationships with their partners, and some had established data infrastructure or were experimenting with data sharing. Organizations commonly participating in DASH 1.0 collaboratives included health care organizations, health departments, and academic institutions.

DASH 1.0 findings

The DASH 1.0 program evaluation found that participation increased community collaboratives' focus on data sharing. The evaluation also helped to identify common barriers and challenges to data sharing, such as lack of data harmonization between systems, burden of developing data use agreements, lack of specific sets of SDOH data, and limited staff capacity. The creation of the *All In: Data for Community Health* peer learning network represented a key positive component of the initiative.

Source: Virginia Tech 2015.

Key components of DASH 1.0 included TA from the NPO and a peer learning network. The TA consisted of regular check-in calls with the NPO and NPO-facilitated conversations with subject matter experts. As part of the peer learning network, each grantee conducted several site visits to other grantees and participated in an online learning community, known as *All In*; this learning community also hosted annual in-person National Meetings.

Given the positive feedback received from DASH 1.0 grantees and the foundational learning provided by the effort, RWJF sought to expand the reach of DASH and bring some of the lessons learned to scale. Consequently, the next phase saw a shift to a lighter-touch and broad-reach approach that provided less one-on-one TA to community collaboratives and expanded upon the *All In* peer learning network from the previous phase to serve as the core vehicle for promoting wider dissemination and sharing. The second iteration of DASH (2.0) also provided smaller Community Impact Contracts – Strategic, Timely, Actionable, Replicable, Targeted (CIC-START) grants to selected community collaboratives, who also participated in *All In*. The DASH 2.0 initiative was built on two key strategies: (1) grow and expand *All In* partnerships and (2) support ongoing engagement of community collaboratives and their progress in promoting cross-sector data systems.

B. Understanding progress and capturing learning

As the DASH approach to promoting cross-sector data-sharing has evolved, RWJF seeks to understand whether the initiative succeeded in expanding its reach to more community collaboratives and, if so, what tradeoffs might have resulted in terms of the depth or quality of the community collaboratives' experiences. The insights gained will be used to inform the third funding cycle of DASH, including types of support that are most effective for communities, ways to improve the *All In* network, and types of complementary activities (such as communications or policy) that will be required to successfully advance communities' use of data to enable cross-sector alignment.

Key questions guiding the DASH evaluation

- **Formative evaluation.** To what extent does participation in *All In* contribute to more and enhanced cross-sector data sharing in communities and to broader efforts to expand cross-system community alignment? How could *All In*, alone, or in conjunction with other programs or sources of community support, better support cross-sector data sharing?
- Outcome evaluation. Has DASH enabled more communities to build access to, enhance relationships for, and have the capacity to use multisector data to strengthen community health, public health and social services systems, and improve health? How has the network accelerated the process of change and progress in communities?

Supporting this decision making requires both a formative evaluation, to understand if the processes of DASH are well-implemented, and an outcomes evaluation, to assess the results achieved in this context. The formative evaluation is aligned with DASH's first strategy and focuses on how well the *All In* peer learning network provides support to community collaboratives. Consistent with the second strategy, the outcomes evaluation will aim to assess

whether participation in *All In* contributes to changes in community collaboratives' ability to share and use cross-sector data to address SDOH and promote health equity. Exhibit A.1 in Appendix A provides a conceptual model for the initiative's evaluation.)

This report presents findings from a formative evaluation of the DASH initiative from October 2018 to July 2019. Data for the formative evaluation included qualitative interviews with key initiative stakeholders and the first round of a network survey with *All In* participants and 18 community collaboratives. The next report will present findings from October 2018 to March 2020 and will focus on a comprehensive evaluation of processes and outcomes for DASH; additional data will include another round of interviews with key stakeholders and non-participating organizations, and a second round of the network survey.

C. Methods for assessing progress

Given the multilayer and dynamic nature of DASH, the formative evaluation relied on a mixed-methods approach to answer research questions. The specific methods identified for the evaluation include a landscape review, key informant interviews and analysis, and network study and analysis. The number of community collaboratives and individuals represented through each data collection and analysis approach varied. Therefore, the number of community collaboratives contributing to specific findings in the report depend on the method used to collect and analyze the data. Appendix A includes additional detail and exhibits of formative evaluation methods.

1. Landscape review

A landscape review of program documentation identified key descriptive information about the 125 community collaboratives in the *All In* network, in particular, their community contexts; goals for sharing data; and partnerships among which to understand variation, change, and progress. Based on this information, the community collaboratives were organized into the following typologies: geographic region, number of years participating in DASH and/or the *All In* network, *All In* network cohort, types of engagement in *All In* network activities, and level of cross-sector data use (use case). Exhibits A.2 to A.4 in Appendix A present the documents reviewed and classifications guiding the abstraction of information.

2. Key informant interviews and analysis

Key informants for the formative evaluation offered first-hand information about DASH implementation and progress from across national stakeholders (n = 10), DASH 1.0 grantees (n = 8), and DASH 2.0 participating community representatives (n = 40). The 40 community representatives participated in the 18 community collaboratives selected for in-depth case study. For these case study collaboratives, interviews were conducted with the lead organization and with one to three of their first degree partners. Through case study communities, interviews collected in-depth information about various models for exchanging information between organizations and across sectors, key steps to develop and maintain a productive cross-sector

¹ A lead organization is defined as the one likely to initiate participation in *All In*.

² A first degree partner is defined as an organization that the lead organization lists as a partner.

data community collaborative, and the contributions of DASH to this process. Exhibit A.5 in Appendix A presents the specific topics covered in interviews by type of key informants. Exhibit A.6 illustrates the process for selecting the case study community collaboratives, and Exhibit A.7 presents the categories for qualitative coding and analysis.

3. Network survey and analysis

All 125 lead organizations participating in the *All In* network received an email with a link to a 15-minute online network survey. In the 18 case study communities, 105 additional first degree, second degree,³ and tertiary⁴ partners also received a link to the online survey. The survey included four main sections: organization characteristics, data-sharing readiness, community partnerships, and *All In* participation. The survey sections, as well as the number of responses per section, are provided in Exhibit I.1. Exhibits A.8 and A.9 in Appendix A include additional detail on the response rate and the survey field process. Key network statistic metrics are presented in Exhibit A.10.

Exhibit I.1. Network survey sections

Survey questions					
Number	Туре	Organization characteristics	Data sharing and readiness	Community partnerships	<i>All In</i> partnerships
54	Lead organizations of community collaboratives not selected for case study	√	✓		✓
18	Lead organizations of community collaboratives selected for case study	✓	✓	✓	✓
45	First and second degree partners of case study community collaboratives	✓	✓	✓	
29	Tertiary partners of case study community collaboratives	✓	✓		
Total number of respondents		146ª	146ª	63	72
Total number of community collaboratives represented		72	72	18	72

Source: Mathematica analysis of network survey data covering the period of May 21 to August 2, 2019.

^a Although the total number of survey respondents is 146, tertiary partners were dropped from the analysis of community collaboratives given that they are not direct partners. Therefore, analysis of organization characteristics and data sharing and readiness includes all survey respondents minus the tertiary partners (n = 117). The final evaluation will include an analysis of tertiary partners as compared to the community collaboratives.

³ A second degree partner is defined as an organization that the first degree partner lists as a partner.

⁴ A tertiary partner is defined as an organization that the second degree partner lists as a partner.

II. OPTIMIZING PARTICIPATION AND ENGAGEMENT

The types of organizations reached by *All In* (the mode through which DASH is operationalized), represents a core underlying factor of participation and engagement in DASH. DASH used the following avenues to recruit its 125 participating community collaboratives:



Partner initiatives → reached 102 community collaboratives. To

capitalize on synergies between similar national and state-based programs that support data sharing, the coordinators of these partner initiatives encourage their participants and grantees to engage in the *All In* network (Exhibit II.1).



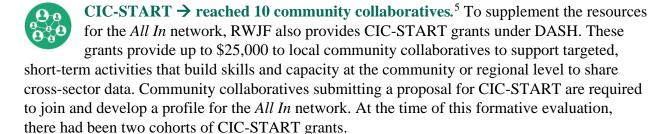
DASH 1.0 → reached 10 community collaboratives. The 10 original community collaboratives

Defining community collaboratives for inclusion in the DASH evaluation

In November 2018, 125 community collaboratives were s part of the *All In* network, which defined participation and eligibility for the formative evaluation. Community collaboratives ranged in size from 2 organizations to 26 organizations and met one of the following inclusion criteria:

- Included on the Community Projects page, indicating all projects (past and present) that received grants from partner initiatives
- Profile on the All In network*
- Receipt of CIC-START funding (Rounds 1 or 2)

that received the initial round of DASH (1.0) grants were part of the early stages of the *All In* network. These collaboratives are typically more advanced in data sharing than other *All In* collaboratives and may serve in mentorship roles to other collaboratives in the *All In* network, presenting on podcasts or webinars.





Other outreach methods \rightarrow reached eight community collaboratives. A few participating collaboratives learned about *All In* through other methods, such as conferences, email, and word-of-mouth.

The formative evaluation includes all community collaboratives that were funded by one of these partner organizations (Exhibit II.1), participated in the first two rounds of CIC-START grants, or were unfunded but learned about the *All In* network through other methods.

^{*} Not all partnerships with profiles are necessarily reflected on the Community Projects page.

⁵ Of these CIC-START collaboratives, five had previously received grants from other partner initiatives. Thus, the total number of community collaboratives is 125 rather than 130, since these collaboratives are in two categories.

Exhibit II.1. All In partner initiatives

Partner initiative (total N = 102)	Description
AcademyHealth Community Health Peer Learning Program (n = 15)	 Aimed to build community capacity to address population health through electronic data sharing across sectors Ran June 2015 to July 2017 and funded 15 community collaboratives; participated in <i>All In</i> since 2015. Five of these community collaboratives were designated as "subject matter expert" community collaboratives and provided TA to the others Included health care organizations with fairly advanced data capacity partnering with at least one other sector No longer an active <i>All In</i> partner; only cohorts up to 2017 included in <i>All In</i>
BUILD Health Challenge (n = 36)	 Aims to address SDOH, health disparities, and health equity by funding collaborative approaches to addressing community health Began in 2015 and has awarded 36 grants through two funding cycles; has participated in <i>All In</i> since 2016 Automatically includes participants in <i>All In</i> Co-locates national meeting with the <i>All In</i> National Meeting Funds collaboratives that must include a community-based organization, local public health agency, and hospital
Colorado Health Foundation (n = 7)	 Aims to improve community health beyond the clinical setting by linking resources between health care providers and communities Some attended the first <i>All In</i> meeting in 2017 No longer an active <i>All In</i> partner; only cohorts up until 2017 included in <i>All In</i>
New Jersey Health Initiatives (n = 20)	 Aims to promote health equity by funding diverse cross-sector partnerships Began in 2015 and has awarded 20 grants through two funding cycles; has participated in <i>All In</i> since 2017 Encourages community collaboratives to participate in <i>All In</i> and all counted as participants Paid for community collaboratives to attend the first year of the <i>All In</i> National Meeting
Population Health Innovation Lab (n = 15)	 Aims to catalyze and accelerate innovative approaches that advance health outcomes and well-being Includes community collaboratives of the California Accountable Communities for Health Initiative Began in 2015 and has awarded 15 grants through one funding cycle; has participated in <i>All In</i> since 2017 Includes community partners such as hospitals, health departments, schools, and local businesses, as well as local residents Held a webinar to introduce its grantees to the <i>All In</i> network and paid for some grantees to go to the <i>All In</i> National Meeting in 2018
Public Health National Center for Innovation (n = 9)	 Aims to identify, implement, and spread innovations in public health practice Funds public health departments to implement innovative initiatives, especially related to health equity Began in 2017 and has awarded 9 grants through one funding cycle; has participated in <i>All In</i> since 2017 Did not include a data component in first cycle of funding, but plans to include cross-sector data sharing in future grant cycles Offered scholarships for grantees to attend the National Meeting

Source: Mathematica's analysis of All In documentation, October to December 2018.

Note: The total number of partner community collaboratives in *All In* was 102 for the formative evaluation.

SDOH = social determinants of health; TA = technical assistance.

A. Diverse characteristics of All In community collaboratives

Although *All In* participating community collaboratives cluster around certain geographic areas and are composed of similar types of organization, they span social sectors and stages of data sharing. In general, the DASH initiative has had wide reach as of September 2019, covering 29 states across 21 social sectors. Participating community collaboratives range in data capacity (that is, their ability to process and use data) and are at different stages of cross-sector data sharing, from being in a planning phase to fully transferring information across organizations. The characteristics of community collaboratives are largely a function of the grant criteria that *All In* partner initiatives use for selecting their grantees, as most community collaboratives came into the network through this method of recruitment. Key characteristics, shown below, serve as a benchmark against which to assess changes over time in *All In* participation.

Organization type. Organizations participating in community collaboratives covered various levels of the health system, including community level non-profits (n = 44), non-profit organizations (n = 38), and local governments (n = 29). Other types of organizations included hospitals and medical practices (n = 19), social service organizations (n = 8), and those that fall into other categories (n = 14) (Exhibit II.2).

Sector. The majority of participating organizations work in the non-profit sector (n = 73) and in the public health sector (n = 57), approximately one-quarter in the clinical sector (n = 30) and housing and homelessness (n = 29), and about one-fifth in food and nutrition (n = 24) or academia and research (n = 22). Most of these organizations also reported working in other additional sectors, such as planning and development (n = 20), mental/behavioral health care (n = 17), or education (n = 14) (Exhibit II.3). Again, the focus on public health is likely a reflection of *All In* partners' focal areas.

Exhibit II.2. Organization type

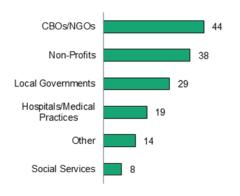
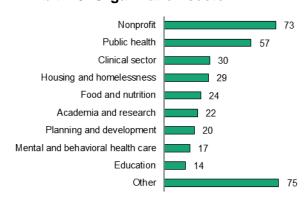


Exhibit II.3. Organization sector



Source: Mathematica's analysis of network survey data for 117 lead organizations and their partners and

117 lead organizations and their partners and representing 72 community collaboratives. The survey was fielded May 21 to August, 2, 2019.

Note: Data will total more than 117, as respondents could Note: select all that applied.

CBO = community-based organizations; NGO = nongovernmental organization.

Source: Mathematica's analysis of network survey data for 117 lead organizations and their partners and representing 72 community collaboratives. The survey was fielded

May 21 to August 2, 2019.

Data will total more than 117, as respondents could select all that applied.

Geographic coverage. According to a landscape review, participating community collaboratives cluster around specific geographic areas tied to the initiatives through which they were outreached, such as New Jersey Health Initiatives and California's Population Health Innovation Lab (Exhibit II.4).

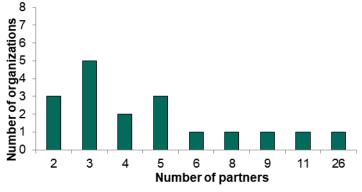
Exhibit II.4. Geographic coverage



Source: Mathematica's analysis of *All In* documentation for 125 community collaboratives, October to December 2018. CHF = Colorado Health Foundation; CHP = AcademyHealth Community Health Peer Learning Program; CIC-START = Community Impact Contracts – Strategic, Timely, Actionable, Replicable, Targeted; DASH = Data Across Sectors for Health; NJHI = New Jersey Health Initiatives; PHIL = Population Health Innovation Lab; PHNCI = Public Health National Center for Innovation.

Network size. Among lead organizations selected for the case study that responded to the network survey (n = 18), community collaboratives range in data-sharing network size from 2 to 26 organizations, with the most common being 3 organizations in a data-sharing collaborative (see Exhibit II.5).

Exhibit II.5. Distribution of the number of peer partners reported by each collaborative

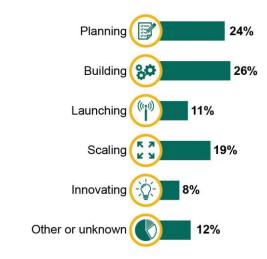


Source: Mathematica's analysis of network survey data for 18 lead organizations selected for the case study and representing 18 community collaboratives. The survey was fielded May 21 to August 2, 2019.

Data-sharing readiness. Among lead organizations and their first and second degree partners who responded to the network survey (n = 63), community collaboratives spanned the range of data-sharing readiness. Some were in the planning stages for data sharing (24 percent) while others were in the innovating data stage (8 percent) (Exhibit II.6).⁶ The rest were in an interim stage of building or beta-testing their data-sharing processes.

Data maturity. Among all lead organizations (case study plus non-case study communities) that responded to the network survey (n = 72), community collaboratives had generally high data maturity scores, meaning that they had capabilities and capacity to support data sharing. Lead organizations reported their current data-sharing practices related to data and technology readiness (seven questions) and organizational readiness (five questions) through multiple choice questions, with responses ranked in order of increasing sophistication from 1 to 4 (Exhibit II.7).

Exhibit II.6. Data-sharing readiness



Source: Mathematica's analysis of network survey data for 18 lead organizations selected for the case study and their first and second degree partners and

representing 18 community collaboratives. The survey was fielded May 21 to August 2, 2019.

Community collaboratives that responded to the Notes: network survey rated their data sharing development stage on a 5-point scale, with scores corresponding to (1) planning: data are not yet being shared across sectors, but they are actively engaged in planning; (2) building: in the process of designing and developing the platforms, databases, templates, and/or software for data sharing; (3) launching: in the beta testing or pilot implementation phase of sharing data; (4) scaling: bringing data-sharing work to scale as envisioned during planning; (5) innovating: data sharing is fully operational as envisioned; the system is being refined and expanded to include new data sources and provide new services such as advanced analytics and reporting functionalities. Overall, All In community collaboratives had a median data-sharing stage of 3.

Community collaboratives that responded to the network survey rated their data sharing development stage on a 5-point scale, with scores corresponding to (1) planning: data are not yet being shared across sectors, but they are actively engaged in planning; (2) building: in the process of designing and developing the platforms, databases, templates, and/or software for data sharing; (3) launching: in the beta testing or pilot implementation phase of sharing data; (4) scaling: bringing data-sharing work to scale as envisioned during planning; (5) innovating: data sharing is fully operational as envisioned; the system is being refined and expanded to include new data sources and provide new services such as advanced analytics and reporting functionalities. Overall, *All In* community collaboratives had a median data-sharing stage of 3.

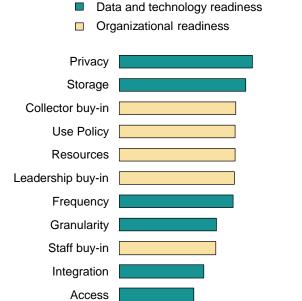
Domains for data and technology readiness included: accessibility, storage, integration, frequency, granularity, privacy, and documentation. Domains for organizational readiness included staff buy-in, collector buy-in, leadership buy-in, resources, and policy. The maximum possible score for each metric was 4 with the exception of granularity, for which the maximum possible score was 5. Reported granularity scores have been converted to a 4-point scale for ease of comparison to the remaining metrics.

On average, lead organizations scored a total of 34.9 out of 48 points on these 12 questions. Specific areas of strength included privacy and data storage. However, lead organizations demonstrated lower data integration, access, and documentation scores—potentially affecting data use across the collaboratives.

B. Level of engagement among participating community collaboratives and organizations within them

The *All In* network fosters participation at two key levels: NPO engagement and peer engagement. NPO engagement includes participation in activities facilitated for the entire community of *All In* participating collaboratives and their organizations; engagement in these activities occurs through use of the *All In* website, virtual attendance at webinars hosted by the NPO, and in-person attendance at annual *All In* meetings (Exhibit II.8). Peer engagement includes the interactions between organizations in community collaboratives about

Exhibit II.7. Average score for each metric of data sharing readiness for lead organizations



Source: Mathematica's analysis of network survey data for 72 lead organizations and representing 72 community collaboratives. The survey was fielded May 21 to August 2, 2010

Note:

Documentation

Lead organizations reported their current data-sharing practices related to data and technology readiness (7 questions) and organizational readiness (5 questions) through multiple choice questions, with responses ranked in order of increasing sophistication from 1 to 4.

2

3

approaches to data sharing. The types of activities the organizations engaged in and intensity of engagement can offer insights into the attractive and helpful features of *All In* and suggest platform improvements that could lead to increased engagement. (Exhibit A.11 in Appendix A includes additional details on the topics and types of information shared during these activities.)

Exhibit II.8. Community collaborative engagement with NPO and peers

NPO engagement Peer-to-peer engagement All In National Meeting In-person at National Meeting 2017 = 270 people (43 collaboratives) 2018 = 235 people Through follow-up phone calls/emails after National Meeting Webinars (24 collaboratives) 2,205 attendees (n = 16) Through online community **Podcasts** (26 collaboratives) 3,435 listens (n = 19) Resources on All In website Through community examples in 644 resources the newsletter (37 collaboratives) All In monthly newsletter DASH mentor program 4,000+ people

Sources: All In National Meeting counts from Data Across Sectors for Health National Program Office 2017 and 2018. Webinar data from Mathematica's analysis of All In webinar attendance records, July 13, 2017 to August 29, 2018. Podcast data from Mathematica's analysis of https://www.stitcher.com/podcast/all-in-data-for-community-health-podcast as of August 2019. Number of resources from Mathematica's analysis of https://www.stitcher.com/podcast/all-in-data-for-community-health-podcast as of August 2019. Peer-to-peer engagement data from Mathematica's analysis of network survey data for 72 lead organizations that responded to the survey. The survey was fielded May 21 to August 2, 2019. Respondents answered the question: "In which of the following ways have you received advice from All In participants."

Note: Exhibit A.11 in Appendix A contains topics for the National Meeting, webinars, and podcasts, and an illustrative list of resources.

1. NPO engagement of community collaboratives

The NPO conducts several activities to engage participating community collaboratives and provide resources to support data sharing. These activities fall into the following categories: convening an annual National Meeting, creating and maintaining the *All In* online community, and organizing additional virtual events.

National Meeting. The NPO arranges a two-day conference—including program and logistics—with various plenary and breakout sessions relevant to cross-sector data sharing. These sessions include presentations from community and subject matter experts. Representatives from participating community collaboratives must obtain funding for their travel and lodging, although scholarships are available from All In and many partner initiatives have paid for their community collaboratives to attend the National Meeting in the past.



Online platform use and profile. The *All In* online community platform allows individuals and collaboratives to create profiles and post discussion threads. There are also archived resources available, such as webinars and toolkits.

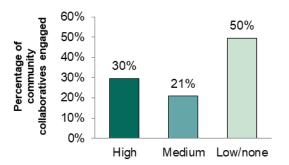


Resource use. All In has produced 27 webinars and 19 podcasts as of September 2019, along with a monthly newsletter that is disseminated to all community collaboratives affiliated with an All In partner, even those that are not part of the online community.

Some partners promote the webinars and podcasts to their grantees, and those community collaboratives may access these resources without being part of the *All In* network in any other way.

Given the various modes of interacting with *All In*, this assessment generally defines engagement as high, medium, and low/none (Exhibit II.9). High engagement is defined as attending the National Meeting and having a project profile on the online platform; medium engagement is defined as having a project profile on the online platform; and low/no engagement is defined as not having a project profile, but receiving resources such as the newsletter and attending webinars.

Exhibit II.9. Level of engagement



Source: Mathematica's analysis of landscape review data for 125 community collaboratives and covering the period from October to December 2018.

Note:

Most Data Across Sectors for Health 1.0 and Public Health National Center for Innovation community collaboratives fell into high engagement; most Academy Health Community Health Peer Learning Program and unfunded community collaboratives fell into medium engagement; most BUILD Health Challenge, Colorado Health Foundation, New Jersey Health Initiatives, Population Health Innovation Lab, and Community Impact Contracts – Strategic, Timely, Actionable, Replicable, Targeted community collaboratives fell into low engagement or none.

Levels of NPO engagement

	Attends National Meeting	Project profile on online platform	Resource use
High	√	√	✓
Medium		✓	✓
Low			✓
None			

Disengaged community collaboratives often leave their profile on All In. As a result, some community collaboratives that are categorized as having medium engagement may actually have low or no engagement. However, data did not allow for further levels of disaggregation or better alternate definition for NPO engagement.

⁸ The *All In* online community includes both project profiles and individual profiles. For this assessment, we noted whether community collaboratives had a project profile. Individual profiles cannot always be linked to specific collaboratives.

A key factor driving level engagement is how the collaboratives were recruited into *All In*—for example, through *All In* partner initiatives, CIC-START, and DASH 1.0. DASH 1.0 focused on recruiting community collaboratives with a high-level of interest and readiness for cross-sector data sharing, and thus these community collaboratives had higher levels of engagement. Although data sharing was not a primary focus of the PHNCI grants, the partner has highly encouraged their grantee's participation in *All In* activities. In contrast, other partners have not necessarily promoted or emphasized the importance of *All In*. For example, CHF is no longer an active partner in *All In* and PHIL is a newer partner that has not yet directed its grantees to the *All In* network. Other partners, such as NJHI, do not place a large focus on data sharing, and thus their grantees may be less inclined to seek out resources in this area.

During interviews, the 18 participating community collaboratives shared other factors likely to influence greater engagement in broader NPO activities. These factors include data priorities that collaboratives may already have before joining *All In*, prioritization of data sharing by organizational leadership, and having a data-sharing champion who takes on the work of coordinating and forwarding the goals of the collaborative even if it falls outside their regular work duties. Community collaboratives reported that these factors increased the relevance of *All In* in their day-to-day work and

"I think for me the most valuable part [of AII In] has been just being able to see what other communities are doing and kind of brainstorm with other communities about what might be working in one community and how would that apply to another community and how we could bring that back [to our community]."

- DASH 2.0 participant

counteracted staff views that data tasks are a burden taking them away from their other responsibilities.

2. Peer-to-peer engagement

Community collaboratives reported that a key value provided by the DASH initiative was the connections to other collaboratives facilitated by *All In*. These peer-connections occurred inperson at the National Meetings; virtually on the telephone, email, and online forums; and through newsletter articles providing insights into peer activities.

Overall, in a network survey, 22 lead organizations (31 percent) responded to a question asking if they connected with peers across the *All In* network on key data-sharing topics. This peer network consists of a total of 38 organizations with 60 interconnections between them (Exhibit II.10). Of these 38 organizations, approximately 42 percent conducted work across multiple sectors, 26 percent focused on the health sector, and the rest focused on other sectors.

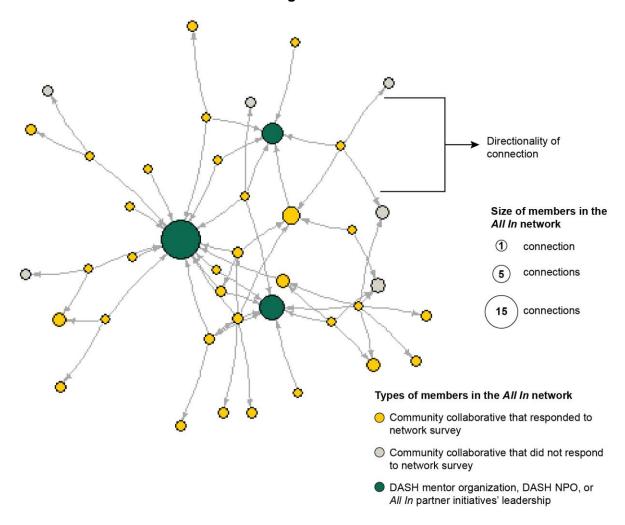


Exhibit II.10. Peer connections between organizations⁹

Source: Mathematica's analysis of network survey data for 22 lead organizations and representing 22 community collaboratives. The survey was fielded May 21to August 2, 2019.

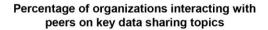
Notes: Twenty-two lead organizations responded to questions in the network survey related to connections with peers. These 22 lead organizations included 38 organizations along with 3 DASH partners and mentors.

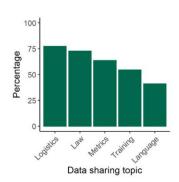
Each circle represents a member of the peer network. Each line between circles represents a connection between the two members, with the arrow leading from the member that initiated the connection and sought advice. While not surveyed, DASH partners and mentors have been included in these networks because many respondent organizations reported seeking advice from them, as shown by their relative size to the other members.

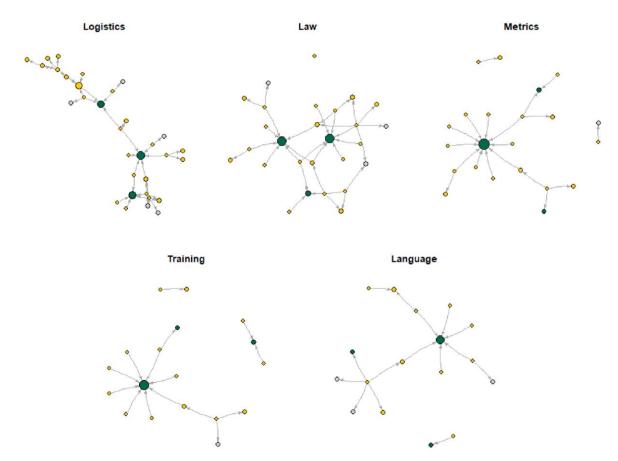
DASH = Data Across Sectors for Health, NPO = National Program Office.

Although they were not surveyed, DASH partners and mentors have been included in these networks because many respondent organizations reported seeking advice from them, as shown by their relative size to the other members.

Exhibit II.11. Connections between peers on key data sharing topics







Source: Mathematica's analysis of network survey data for 22 lead organizations and representing 22 community collaboratives. The survey was fielded May 21 to August 2, 2019.

"We were connected to a couple of other organizations that we had some conference calls with about their datasharing efforts especially between the criminal justice and mental health population. I think the biggest challenge and the biggest barriers that we find with data sharing, especially for mental health, is because our confidentiality codes are so strict that's very, very difficult. So, there's definitely been some conversations and outreach with other organizations about how they're doing things and those were referred through the network."

- DASH 2.0 participant

Among the key data-sharing topics included in the network survey, laws and logistics around data sharing are the most popular and are fundamental to the development of data-sharing networks. These topics also serve as building blocks for data sharing. Of the 22 lead organizations reporting peer connections, approximately three-fourths interacted with peers regarding laws around data sharing (77 percent) and logistics of data sharing (73 percent) (Exhibit II.11). Unsurprisingly, these topics generated many interconnections between peers: logistics of data sharing (29 organizations, 38 interconnections) and laws of data sharing (24 organizations, 31 interconnections made). Peer

connections focusing on the three other domains (language, training, and metrics) are at the preliminary stages of development. However, those interested in these topics also seek advice from DASH mentor organizations, DASH NPO, and *All In* partner initiatives' leadership.¹⁰

Within these topical discussions, some non-DASH mentor organizations emerge as clear hubs for information, as shown by the size of the circle in Exhibit II.10—the larger size indicates more connections. These hub organizations are mainly lead organizations for DASH 1.0 and Academy Health CHP collaboratives, indicating that they have been involved in the *All In* network for the longest and are more advanced in data sharing.

C. Strategies for increasing engagement among community collaboratives and organizations

To complement research on factors promoting participation, the formative evaluation also explored barriers to participation among 62 community collaboratives that may provide insights into low or no engagement. Identifying barriers and gaps can provide insight into areas for improvement that could increase participation among current community collaboratives as well as encourage others to participate.

Among the 18 community collaboratives selected for indepth case studies, half cited limited time and resources as the major barrier to participation in *All In*. Other challenges

"I would say the main challenge for us is just prioritizing it. I know a lot of these collaboratives are doing some really difficult things and trying to improve some kind of desperate conditions and we are in that same place where the actual work sometimes gets in the way of developing those kind of long-term sustainable important pieces of the

- DASH 2.0 participant

"I think I tried the online forum and I wasn't finding value. I'm just going to be honest, if I had all the time the day I'd be all over it, but you have to pick and choose your priorities."

- DASH 2.0 participant

¹⁰ *All In* partners and mentors (displayed in green) include both the leadership of the DASH NPO and other *All In* partner organizations, as well as mentor communities in the DASH mentor program.

include difficulty navigating the All In online platform, difficulty distinguishing between All In and other initiatives related to data sharing and/or SDOH, the need for one-onone TA, and lack of financing to achieve needed systems change.

Navigating the online platform. The 18 case study collaboratives reported issues and recommendations related to the All In online platform that mainly centered on its organization of resources and communications strategies.



Organization. Many of those interviewed in the case study collaboratives described difficulties using the website and suggested organizing

resources by topic to make it easier and more efficient for them to navigate. These suggestions included the use of various types of resources (conference materials, trainings, job opportunities) and topics (legal strategies, data harmonization). In particular, tagging content of message boards would help users better hone in on relevant information since some participants found the volume of content from the discussion forums overwhelming and difficult to sort.



Access. Most of those interviewed felt access should be more open for certain materials. A few respondents recommended posting the key messages or findings on a website that does not require log-in.



Communications. Currently, All In sends "Daily Digests," newsletters, and other emails. Many of those interviewed found the communications

overwhelming and recommended that dissemination be more strategic and targeted. Specifically, differentiating the newsletters from the "Daily Digest" and organizing the "Daily Digest" into key topics (rather than snippets of full conversations) was a common recommendation. Most said that the website generates too many emails, and suggested creating options for participants to subscribe to specific

"...I've already spent my \$25,000 in like the first month of this project, and now we're just doing it, to be good stewards...I think the small grants aren't enough."

> - DASH 1.0 participant and DASH mentor

"... Why not have larger implementation funding available so that you can help move the needle on implementation, because you can plan all day, but at the end of the day, I have this great plan for getting the data set, but there's no money to implement it."

> - DASH 1.0 participant and **DASH** mentor

"...when I tried to use it, there's a little bit of gate keeping that sometimes frustrates me, I'll forget what my login was and that kind of thing..."

- DASH 1.0 participant

"Because I think that [differentiating All In] will help communities also prioritize who they interact with and how they spend their time. I think for some of them it can be confusing about who do they go to ... So maybe more focus around the branding, how to really stand out and make All In work even more distinct ...'

- DASH 2.0 participant

topics and reserving network-wide communications to the most pressing and cross-cutting issues.

Branding. Because various partner initiatives participating in All In overlap in their goals and purposes, many case study collaboratives recommended further differentiating the All In brand. However, those interviewed did not provide specific recommendations about how to differentiate *All In* from other initiatives.

Tailored TA. Case study community collaboratives reported the need for increased one-on-one TA opportunities, much like those provided under DASH 1.0. A common reason cited was that tailored TA is needed to right size and appropriately target solutions to the contexts for each community collaborative. Some said that they prefer one-on-one learning over a one-size fits all approach. One person said, "...There's a gazillion toolkits on everything, but they don't all apply to the same way [to us] as other communities."

Financing. According to case study collaboratives, coordinating across sectors to share data has large and ongoing costs. As a result, some recommended continuing the CIC-START grants to help collaboratives work toward data sharing and offer scholarships for collaboratives to attend the National Meeting so they can efficiently learn and exchange knowledge with other collaboratives. A few original DASH 1.0 grantees mentioned that providing larger implementation grants may be necessary in the future to support the transition from planning to implementation.

Recommendations to increase engagement

Platform improvements

- Improve organization
- · Open up access
- Refine email communications

Outreach approach

- Articulate how All In differs
- Coordinate with other online communities
- Market All In brand

Tailored TA

Offer one-on-one support

Financing

- Provide financial assistance
- Include more legal resources

Implications of participation and engagement for DASH

Findings related to tailoring TA and financing raise questions as to whether shifting the DASH strategy from high-touch to lower-touch had unintended consequences. Such changes may have inadvertently excluded community collaboratives and organizations with larger barriers to participating in *All In*; these organizations often could not find time or resources to engage in *All In* beyond their daily responsibilities.

Some of these barriers to participation might be addressed as DASH evolves from a program that drives cross-sector data sharing to incorporate additional components. To complement its dissemination of tools and guidance, the DASH initiative approaches its CIC-START grant with the goal of providing catalytic funding to organizations where a boost would provide the stepping stones to the next phase to achieve cross-sector data sharing. Mentoring also occurs now where exemplary sites are assigned a cohort of mentees based on the relevancy of topic areas. All these components are designed to provide technical support and foster peer connections. The initiative will also focus on translating lessons from communities to inform state-focused systems and policy change and on farther reaching communications to demonstrate a path forward within varying levels of resources and highlight opportunities for communities to

build data systems that enable coordination and alignment among health care, public health, and social services. As the initiative evolves, continued assessment will assist in ascertaining how each of these additional components effect participation and engagement.

III. PAVING THE WAY TO DATA SHARING AND HEALTH OUTCOMES

Participation and engagement in *All In* thus far indicates that DASH has reached a large number and range of community collaboratives and organizations. However, the question remains as to whether and how this engagement led to cross-sector data sharing. Though the formative evaluation has a limited focus on DASH's contributions to data sharing within these community collaboratives, this chapter begins laying the groundwork for such assessment. This chapter examines community collaboratives' progress towards implementing key components of sharing, highlighting cross-sector data uses, and documenting early achievement of specific outcomes from data sharing.

A. DASH community collaboratives' progress toward data sharing

RWJF's Transforming Health and Health Care Systems has four core components of aligned partnerships. The four components of data sharing are outlined below:

- Share a mutual understanding and commitment to a vision and priority outcomes (purpose)
- Create a shared data and measurement system that enables sectors to effectively coordinate activities and measure shared progress (data)
- Establish sustainable financing with appropriate incentives and shared accountability (financing)
- Organize around an infrastructure with leadership, appropriate roles, and defined relationships (governance)

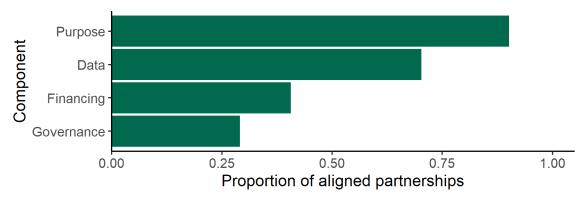
Components of alignment between community collaborative partners

- Purpose
- Data
- Financing
- Governance

Adhering to and operationalizing these components could help partnerships (represented by the interconnections between organizations) of community collaboratives to develop necessary agreements and infrastructure to share data, address social determinants of health, and promote health equity. In total, 18 lead organizations selected for the case study and their first and second degree partners (n = 63 network survey respondents representing the 18 collaboratives) reported 319 partnerships; of these partnerships, 92 percent were between organizations who were aligned on their goals and priorities (Exhibit III.1). Unsurprisingly, partnerships reported less alignment on components that might require organization-wide changes, such as funding and governance. Those partnerships with shared governance were largely led by non-profit organizations; these organizations often act as the convener or coordinator between all partners involved in the larger

initiative. Several non-profit organizations developed work or action groups to manage the overall partnership.

Exhibit III.1. The proportion of partnerships where the organizations in the partnership align for each of the key components



Source: Mathematica's analysis of network survey data from 63 organizations representing 18 case study community collaboratives. The survey was fielded May 21 to August 2, 2019.

Community collaboratives that adhere more to the components of data sharing reported that data sharing had helped them to coordinate care for individuals and identify trends and patterns at the community level to address social determinants of health. For example, one collaborative's shared data revealed a disproportionate number of hospital admissions among low-income infants not enrolled in the Supplemental Nutrition Assistance Program, the Special Supplemental Nutrition Program for Women, Infants, and Children, or medical insurance. The collaborative then shared this data with their partners, who developed solutions to address this problem, which had previously been unrecognized. To address disparities in early childhood education, another collaborative used shared data to identify families with preschool aged children who were in unstable housing situations or facing evictions. This collaborative reached out to those families to facilitate their children's enrollment in preschool, as they likely face disproportionate barriers to preschool enrollment.



Case studies showing the role of DASH in facilitating cross-sector data sharing and intended achievements in various contexts

Case Study: Identifying Lead Exposure in Schools (early data sharing)

Collaborative location: Northeastern part of the country; city level

Year formed: Developed as a sub-group of a larger county health improvement coalition in 2016

Goal: Improve the city's overall health and well-being, such as increasing access to healthy foods, promoting better nutrition, and improving the built environment

Agencies represented: Nursing association, local health department, non-profit agencies, governmental partners, local residents, businesses, and the city's hospital system. Current specific focus is on preventing lead exposure

Role of *All In***:** Catalyzed recognition of data sharing as core to measuring outcomes, made the case for their intervention, and provided information to support decision making

Data sharing: Facilitated an agreement between the borough school district and health department to provide free lead testing to all children in the district and to share data about student's lead exposure

Key considerations: Compliance with HIPAA and FERPA regulations

Ultimate goal: Address lead exposure and develop intervention plans when lead exposure is identified Intervention plans are in progress due to the early stage of the partnership's focus on data sharing.

Case Study: Sharing Health and Housing Data (advanced data sharing)

Collaborative location: Western part of the country; county level

Year formed: Formed in 2016 to apply for DASH 1.0 grant; partners had history of collaboration

Goal: Allow the public health authority to provide the housing authorities with more information about the health issues their residents face. Specific information to share includes: people on Medicaid, their health care utilization, and opportunities to promote health through the housing authority

Agencies represented: County health department; two local housing authorities (city and county level)

Role of *All In:* National Meeting helped housing authorities understand HIPAA requirements; DASH 1.0 funding helped build data-sharing infrastructure

Data sharing: Developed a public-facing Tableau dashboard of Medicaid and housing authority information. The interactive tool allows people to make custom visuals to assess key demographics, health conditions (for example, diabetes, asthma), and health care utilization (like emergency room visits and hospitalizations) by housing zone and authority.

Key facilitators: Organizational support for innovation; history of successful collaboration among partners; commitment from leadership to dedicate staff time for this work

Ultimate goal: Eventually using information from the dashboard to guide decisions related to development and implementation of program and policy interventions

1. Factors associated with data sharing

Explicit priorities around data sharing not only drive engagement in *All In* but motivate community collaboratives to share data. Those that did not share data as a core component of collaboration (or have data sharing as a written key requirement in their grant) were less likely to share data and cite it as a factor in addressing social determinants of health. In addition, commitment from leadership and a having data-sharing champion was another key driving force to data sharing.

"We just expected that [grantees] could [build a roadmap towards data sharing] and at a certain point like six months away from delivery of the products, we realized how little progress [grantees] were making towards those efforts and also how little clue they had as to how to do that."

- All In partner initiative

Some community collaboratives, though motivated to share data, had a limited understanding of what existing data they have, what data currently exists outside their collaborative, and/or what to do with it. One partner in particular noted that its grantees had trouble building a "roadmap" towards data sharing. As community collaboratives highlight their limited capacity, in addition to having this roadmap, financing and resources are also critical to realizing the vision for data sharing.

2. Role of DASH

DASH's value to community collaboratives lies in its role as a convener, information resource, and provider of seed capital (Exhibit III.2). However, according to *All In* participants, DASH's direct influence and contribution to data sharing is less clear. Of the 18 collaboratives participating in in-depth case studies, most seemed to indicate that participation in *All In*, along with leadership from the DASH NPO and—for some—financial support received as an awardee, provided the motivation, knowledge, and resources needed to forge ahead in data sharing. For

"I don't think it pushed us in drastically newer different directions. But it certainly gave us ideas in terms of implementation. Kind of like strategies to use when we were in the community or thoughts about how to effectively present some of the materials that we had or different data sources to potentially look at."

- DASH 2.0 participant

those receiving funds through DASH 1.0 grants, the associated requirements of these grants itself helped community collaboratives maintain a schedule to stay on track, as did the check-in calls, which facilitated connections with relevant experts. The funding was integral in building the infrastructure for data sharing; it also enabled community collaboratives to set aside dedicated staff time to focus on the work. Within this context, Exhibit III.2 summarizes topics with which 18 community collaboratives participating in in-depth case studies found *All In* particularly helpful.

Exhibit III.2. Most useful topics covered, by All In role

Role	Topics
Bridge between community collaboratives	 Range of approaches to data collection and sharing Strategies for building trust between organizations Managing agreements to use confidential data
Hub for cross-sector data sharing information	 Importance of building trust and strategies for building trust between organizations Delivering care in a community centered way by bringing stakeholders together to identify community needs
Provider of seed capital (DASH 1.0)	Developing infrastructure for data sharing systemsFilling a funding gap

Source: Mathematica's analysis of in-depth case studies for 18 community collaboratives. Interviews took place June 3 to July 9, 2019

Bridge between community collaboratives. Several community collaboratives participating in *All In* reported that connecting to others pursuing parallel efforts benefited their work—although it did not dramatically change the course of their efforts. Some collaboratives found it especially useful to connect with collaboratives that were led by similar types of organizations (for example, health departments) to hear how they are addressing structural barriers to data sharing. Another collaborative mentioned connecting with an organization that provided templates and samples of legal documents, which helped the collaborative frame language to use for their legal team.

Hub for cross-sector data sharing information. With its hundreds of tools and training, *All In* provides a large hub of information that, if organized and leveraged optimally, could increase knowledge about and facilitate efforts around cross-sector data sharing. For example, an article from the *All In* newsletter helped a collaborative see how critical building trust is to ultimately convince partner organizations to be willing to share confidential data. This collaborative also felt that *All In* provided valuable lessons about delivering care in a community centered way, by bringing stakeholders together to identify and prioritize community needs. This ultimately enabled them to build a community advisory board to guide their work. Another collaborative cited the newsletter as particularly well-curated and helpful with a lot of information compiled in one place, including details on future funding opportunities.

Seed capital. DASH 1.0 provided funding that is integral for grantees to build a data-sharing system. Several DASH 1.0 community collaboratives that participated in the original grant said the funding made the entire project possible, as they would not have been able to set aside staff time to focus on the project without dedicated funding. Some funding went to their partners as well, allowing them to pay for staff time to attend meetings. This funding helped them "bridge a gap" while they developed a longer-term sustainability plan and applied for other funding. CIC-

Given their participation in the initial model, DASH 1.0 community collaboratives had a different take: several of these collaboratives mentioned that the connections they made to other partnerships through DASH as instrumental in helping them achieve their goals. Not only were these connections helpful in practical terms (learning new ideas from these collaboratives), it also motivated them to see other programs with the same vision and goals. However, it is important to note that connections facilitated under DASH 1.0 included site visits to other communities that were not included in DASH 2.0.

START grants during DASH 2.0 also helped defray the costs of staff time spent on data-sharing work.

IV. ROAD AHEAD

Given the evolution of DASH to a lighter-touch, high-reach approach, the influence of DASH on cross-sector data sharing and resulting outcomes has become more widespread and diffuse in comparison to the DASH 1.0 model. In addition, the initiative serves community collaboratives with greater diversity in geography and in data-sharing readiness. The greater diversity enables DASH to potentially influence a larger audience of communities and introduce them to the importance of cross-sector data sharing—potentially leading to mainstreaming of cross-sector data-sharing concepts and building the infrastructure for data sharing. However, the tradeoff to this broader reach is that there is less frequency and intensity of the targeted support that is more likely to bring about systems change in a specific community. Illustrating this tradeoff is the low or no engagement by 50 percent of community collaboratives represented in the *All In* network, whereas all of the DASH 1.0 grantees demonstrate and continue to demonstrate strong commitment to cross-sector data sharing.

DASH 1.0 communities not only had higher levels of data-sharing readiness, but more designated funding to facilitate their work. Lack of funding for data sharing provides less directive and accountability to divert resources to it. This issue is highlighted by the low participation and engagement among organizations entering DASH through *All In* partner initiatives without a data-sharing objective. Even with organizations that have data sharing as part of their mandate, it often represents only a small portion, thus, limiting community collaboratives' ability and motivation to engage deeply in *All In*. Strong championship of data sharing can counterbalance these gaps in capacity but only with adequate funding and resources to carry out the data-sharing vision.

The diffuse and wider reach of DASH also has implications on measuring the effect of the initiative on data sharing and outcomes, with the initiative playing a complementary role to existing activities. As a result, when considering key factors in achieving outcomes, several community collaboratives stated that DASH participation played a relatively minor role. In particular, community collaboratives less advanced in data sharing were more likely to cite accomplishments in addressing SDOH as being influenced by factors other than data sharing. This finding may also indicate that data sharing, while a necessary component to achieving health equity, likely represents one of several factors to reaching this goal.

As the next stage of DASH continues, the initiative could show greater impacts by strategically working with current *All In* partner initiatives to include data sharing as a core element of its work. Some current partner initiatives are already planning to adapt their future grant requirements to include a data-sharing component to better align their grantees with *All In*. In addition, recruiting new collaboratives that have cross-sector data sharing as a key and funded component and offering resources to support cross-sector data sharing will also further extend and strengthen DASH's reach. Depending on the community contexts and stage of development, the amount of seed funding needed to develop infrastructure for data sharing could vary. As

discussed in Chapter II, further enhancements to the *All In* online platform and communications strategy could also increase its use to support data sharing.

Concluding remarks

In the next phase of DASH, recruiting community collaboratives already interested and/or with a vested interest—regardless of data-sharing readiness level—could help emphasize the value of the cross-sector data sharing to other community collaboratives, strengthen interactions across and within community collaboratives, and catalyze further use of these data to address SDOH. However, without more directed outreach, the initiative is in danger of continuing to reach an audience that does not prioritize cross-sector data sharing, thereby, undermining its ability to support the systemic changes required to address SDOH.

The next phase of the evaluation will focus on further assessing the changes in community collaboratives' data sharing and outcomes and the contributions DASH has made to these changes during DASH 2.0. It will also explore sustainability of DASH and cross-sector data sharing in community collaboratives.

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APPENDIX A. SUPPLEMENTAL EXHIBITS

Exhibit A.1. Conceptual framework for DASH 2.0 evaluation

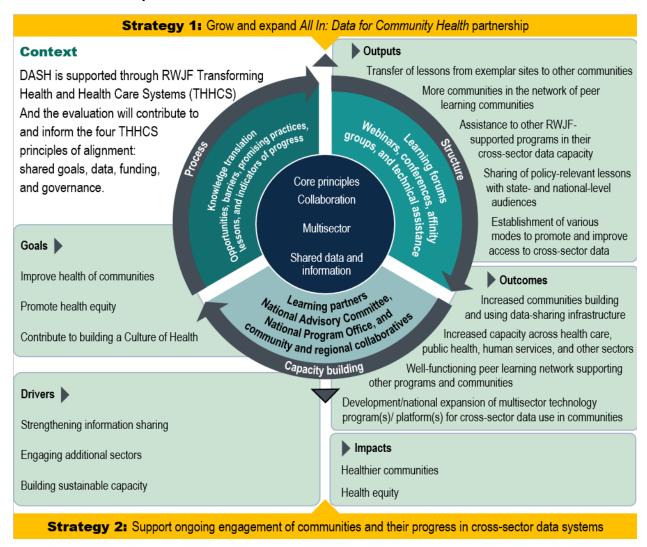


Exhibit A.2. Documentation reviewed

- Names and locations of community collaboratives
- Applications of DASH 1.0 and CIC-START awardees
- Reports submitted by DASH 1.0 and CIC-START awardees
- *All In* webinar attendance records
- Results of the Community Readiness Assessment
- Applications for the DASH Mentorship Program
- Statistics on *All In* participation
- Information on the RWJF website pertaining to the DASH program
- DASH website
- 2017 and 2018 All In National Meeting materials
- DASH environmental scan
- *All In* online community project profiles

Exhibit A.3. Abstraction categories

Abstraction categories	Description of the abstraction category
Grantee overview	Background of community collaborative
Health objective	Anticipated health outcome of community collaborative
City	City or cities of community collaborative
State	State of community collaborative
County	County of community collaborative
Geographic region	Region of community collaborative
Number of years participating in DASH	Length of participation in DASH/All In network
All In network cohort	How the community collaborative was supported and joined DASH
Types of engagement in <i>All In</i> network activities (webinars, other events)	Whether an individual participating in <i>All In</i> has engaged with <i>All In</i> network activities (webinars, meetings, online community)
Anticipated products (if applicable)	Whether the community collaborative intends to develop a product as an outcome of being involved with DASH
Data types	The types of data the community collaborative uses
Level of cross-sector data use (use case)	The level of cross-sector data use the community collaborative aims to have
Project focus	The health issue of focus for community collaborative
Sectors	The sector that the community collaborative focuses on (business, legal, public health, transportation, and so on)
Site type practice	The site classification of the lead organization
Target populations	The targeted population of the lead organization
Collaborative information	Description of collaborative

Abstraction categories	Description of the abstraction category
Name of community	The community collaborative name
Name of lead organization	The lead organization name
Name of partners or collaborators	Names of any partners or collaborators

Exhibit A.4. Community collaborative typology developed through landscape review

Illustrative characteristic	Possible classifications
Geographic region ^a	Northeast, Midwest, West, and South
Number of years participating in DASH and/or the <i>All In</i> network	1 to 2 years; 3 to 4 years
All In network cohort (proxy for community readiness for data sharing) ^a	Phase 1 community (high readiness); supported by CHP (high readiness); former or completed grantee with one of the national DASH partners (BUILD/NJHI/PHNCI/PHIL/CHF) (intermediate/low readiness) ^b
Types of engagement in All In network activities	Attendance at <i>All In</i> National Meeting; project profile on <i>All In</i> online community; members with individual profiles on <i>All In</i> online community; member attendance at webinars; application to DASH mentor grant or CIC-START grant
Level of cross-sector data use (use case) ^a	Individual (Whole-person Systems of Care); population-based (Total Population/Community-Wide Health and Well-Being) ^c

^a Characteristics considered for sampling of 25 community collaboratives for case study.

BUILD = Build Health Challenge; CHF = Colorado Health Foundation; CHP = Community Health Peer Learning Program; CIC-START = Community Impact Contracts—Strategic, Timely, Actionable, Replicable, Targeted; NJHI = New Jersey Health Initiative; PHIL = Public Health Innovation Lab; PHNCI = Public Health National Center for Innovations.

Exhibit A.5. Topics of interviews by key informant type

Key informant type	Topics	Number of communities	Number of key informants per community	Total interviews
DASH staff (including RWJF staff, NPO staff, staff of other partners, and National Advisory Council (NAC) staff)	 DASH 2.0 design Characteristics of DASH community partnerships Communities' experience with DASH and facilitators and challenges DASH learning and translation 	n.a.	10	10
DASH 1.0 community representatives	 Community partnership background and characteristics Progress with THHCS components and cross-sector data sharing Experience with DASH 1.0 and facilitators and challenges Experience with DASH 2.0 DASH accomplishments and sustainability 	8	1	8

^b CIC-START awardees have various degrees of readiness. They will receive a designation of high readiness if they participated in DASH 1.0 or CHP. Otherwise, they will receive a designation of intermediate/low readiness.

^c Categories based on the DASH Framework for shared data use cases developed by the DASH NPO.

Key informant type	Topics	Number of communities	Number of key informants per community	Total interviews
DASH 2.0 participating community representatives	 Community partnership background and characteristics Progress with THHCS components and cross-sector data sharing Experience with DASH and facilitators and challenges DASH accomplishments and sustainability 	18ª	1-3 ^b	40
Total	·	26	_	58

^a Includes two DASH 1.0 communities.

DASH = Data Sharing Across Sectors for Health; n.a. = not applicable; NAC = National Advisory Council; NPO = National Program Office; RWJF = Robert Wood Johnson Foundation; THHCS = Transforming Health and Health Care Systems.

Exhibit A.6. Process for developing samples

Key informant type	Sample selection	
DASH NPO staff	Purposefully selected 3 DASH NPO staff familiar with the initiative	
All In partner staff	Purposefully selected 1 staff member from each of the 7 original All In partners	
DASH 1.0	Purposefully selected 8 of the 10 DASH 1.0 communities (remaining 2 commun included in case study)	ities
Case study communities	 Phase 1 (obtained contacts for 14 communities) Randomly selected 25 communities based on diversity in geographic region, In cohort, and level of cross-sector data use Worked with NPO to develop a contact list of All In respondents and lead organizations Contacted the 25 case study communities to ask for their community partner (first degree partners) Contacted first degree partners to ask for other data-sharing partners (secondegree partners) Phase 2 (obtained contacts for 8 communities) Added a purposeful sample of 10 communities to reach 25 communities in the case study Contacted 10 additional communities based on their level of involvement with <i>In</i> (hosted a podcast, recently active on the network, hosted a webinar, and son) Phase 3 (removed 1 community) Combined samples from Phases 1 and 2 for 22 communities for the case study Contacted case study communities for interviews, and 1 community refused participate 	rs and he ch All so udy

DASH = Data Across Sectors for Health; NPO = National Program Office.

^b Attempted three interviews per collaborative. Because of staff limitations, limited involvement with *All In*, or inability to reach the appropriate person, evaluator was able to obtain only 1 or 2 interviews with a few communities.

Exhibit A.7. Categories for qualitative coding

Code	Sub-code	Description
Characteristics of community partnerships	Health issue	Specific health issue the partnership is working on, or what they were working on when they joined DASH/All In); geographic scope of work
	Partnership background /readiness	How partnership was established [years of existence, motivation for formation]; progress with cross-sector data sharing before joining All In; Differences in capacity among partnerships participating in All In
	Joined DASH/ <i>All</i> In	How a partnership joined DASH/All In; Whether a partnership received previous grant support from DASH/RWJF; Criteria RWJF/NPOs use to recruit partnerships to participate
	DASH background	Differences and similarities between DASH 1.0 and 2.0; how and when partner organizations (BUILD, NJHI, etc.) joined the <i>All In</i> network; ultimate goal of DASH/ <i>All In</i>
Progress with RWJF	Structure/ governance	Structure of community partnership; role of lead organization vs. other participating organizations; sectors represented
components (purpose, data, financing, and governance	Shared priorities	Description of the partnership's main priorities; whether all the organizations in the partnership agree on these priorities [which health and social needs to address in the community]); extent to which partnership has an equity focus
	Funding	Whether partnership has received any funding; where funding came from and timeline; and whether they plan to seek additional funding in future
	Data system	Any actions the partnership has taken to create a shared data system or shared metrics; whether DASH/All In played a role in their ability to take any of those actions
DASH/ All In experiences and facilitators/ challenges	DASH activities	Activities that partnerships have participated in through DASH/All In (e.g. attending All In National Meeting, attending or presenting on webinars, creating posts in online forum, reading newsletter); Also include amount of time spend on DASH activities and whether they are integrated into the respondent's regular work
	Helpful	 Ways in which respondent explicitly says participation in DASH/All In was helpful or affected the functioning and structure of the partnership. Specifically, what they found to be most helpful about participating in All In. Also include: Ways in which DASH/All In has helped the partnership address any challenges around cross-sector data sharing. Ways in which DASH 1.0 communities used their funding award
	Other initiatives	Whether the partnership has connected with any other initiatives that are working on the same or a related issue through the <i>All In</i> network. Include whether these connections affected the partnership's work
	Challenges/ recommendations	 Any challenges with cross-sector data sharing that have affected the partnership's progress Recommendations for how DASH/All In could be improved Whether non-participants have heard of the partnership in their area, and reasons they have not joined the partnership
DASH accomplishments and sustainability	Accomplishments	 The community partnership's main accomplishments, and any role that DASH played in those accomplishments. How cross-sector data have been used in the community so far, and any actions the community has taken as a result of datasharing efforts

Code	Sub-code	Description
	Sustainability	Whether the partnership anticipates any challenges in sustaining cross- sector data sharing over time, and, if they have a current finding source, whether they will be able to continue their efforts once that funding source ends
	Translation to state and local agency efforts	Whether the partnership's work could serve as an example for state and local agencies; and how state and local agencies could use the partnership's experience to inform their work

BUILD = BUILD Health Challenge; DASH = Data Across Sectors for Health; NJHI = New Jersey Health Initiatives; NPO = National Program Office; RWJF = Robert Wood Johnson Foundation.

Exhibit A.8. Network survey respondents

Type ^a	Complete	Incomplete	N/A	Error	Total	Response rate
0	54	8	26	1	89	61%
1	18	2	3	0	23	78%
2	74	18	26	0	118	63%
Total	146	28	55	1	230	

 $^{^{}a}0 = 100$ lead organizations not selected for case study; 1 = 100 lead organizations selected for case study; 2 = 100 lead organizations and their partners

N/A = not applicable.

Exhibit A.9. Network study fielding

Date	Steps
5/21/2019	Advance letter with \$5 pre-pay incentive to 269 cases
5/23/2019	Email 1
5/28/2019	Advance letter with \$5 pre-pay incentive to 8 cases (replacement communities)
5/31/2019	Postcard 1
6/5/2019	Email 2
6/18/2019	Non-responder letter
6/25/2019	Email 3
7/8/2019	Email 4
7/12/2019	Phone call follow-ups
7/18/2019	Postcard 2
7/22/2019	Non-responder email 5
7/29/2019	Final email 6
7/31/2019	End fielding period ^a

^aAt the end of the fielding period, we received 146 survey responses (63% response rate).

Exhibit A.10. Key network statistics metrics

Level	Metric	Description
Network	Network size	Number of organizations (nodes) in network
	Density	Number of partnerships (edges) that have formed compared to the number of partnerships that could possibly form, given the organizations in the network
	Homophily	Measure of tendency for organizations to partner with other organizations in the network
	Average clustering coefficient	Measure of tendency of organizations to cluster together
	Median degree	Median number of partnerships (edges) per organization (node)
	Sectors represented	The sectors of the organizations in the network
	Level of data sharing	Average data sharing score across data and technology readiness and organizational readiness metrics
Organization	Degree centrality	Number of partnerships
	Betweenness	Number of times the organization is part of a connection between two other organizations in the network
	Closeness	Average shortest distance between the organization and other organizations in the network

Exhibit A.11. Topics for community collaborative engagement by NPO activity

2017 National Meeting: April 19 to 21, 2017

Plenary sessions

- · Equity in the Age of Data
- Measuring Our Progress
- · Other (Big!) Parts of the Movement
- Dolphin Tanks Reports & Key Insights
- · Identifying and Capturing the Value in Multi-Sector Collaborations
- · Beyond the Grant: Planning for Sustainability
- · What's Next: Walking the Data-Driven Walk on Future Planning, Practice, and Policy
- We are All In!

Quick hits

- Environmental Scan
- Monitoring Capacity for Multi-Sector Data Sharing and Collaboration
- Intro to All In Tools and Resources

Breakout sessions

- · Community Presentations
- Technical Assistance (TA) Session
- Introductions to All In Tools and Resources
- Jumping in the Deep End

2018 National Meeting: September 11 to 12, 2018

Plenary sessions

- · Building a Movement Together for Equity
- Engaging Payers in Addressing Social Determinants of Health
- Who Needs Health Equity? The Urgency to Build Public Will to Advance Our Work
- Moving Upstream: Challenges, Opportunities, and Moral Imperatives to Improve Health and Health Care
- Overcoming Policy Paralysis: Perspectives from the Field

Next steps for our communities, All In, and deep-dive workshops

- Data Sharing and the Law: Deep Dive on Consent
- More Than Numbers: How to Use Data to Advance Health Equity
- · Asset-Based Community Development: Strategies and Tools for Engaging Your Community
- Sustainably Financing Community Health: Where to Look, When to Pursue, and How to Access Different Sources of Capital
- Strategies to Help You Advance Health, Wellbeing, and Equity in Communities

Webinars: July 13, 2017, to August 29, 2018

- Leveraging User-Centered Technology to Improve Health: 07/13/2017
- Developing Data Systems for Care Coordination Using Patient-Centered Approaches: 08/30/1017
- Master Person Indexes: A Tool for Population Health Management: 09/06/2017
- Using Big Data and Analytics to Improve Public Health: 11/09/2017
- Big Cities, Big Data, Big Lessons! Leveraging Multi-Sector Data in Public Health to Address Social Determinants of Health: 12/13/2017
- Improving Precision in Public Health through Innovative Data Sharing Approaches: 1/10/2018
- Food for Health: Improving Community Health by Addressing Food Insecurity: 2/28/2018
- Using EHR data for Community Health Part 1: 3/13/2018
- Innovative Strategies for Engaging Residents in Community Health Improvement Planning: 4/17/2018
- Using EHR data for Community Health Part 2: 5/8/2018
- Going All In to Improve Health through Multi-sector Collaboration and Systematic Data Sharing (co-hosted with County Health Rankings & Roadmaps): 5/15/2018
- Employing HIEs to Address Social Determinants of Health: 6/14/2018
- Effectively Stewarding Multi-Sector Partners for Health System Transformation: 6/19/2018
- Empowering Cross-Sector Data Sharing to Improve Health and Public Safety: 7/25/2018
- Research and Application: Measuring Social Needs and Outcomes: 8/21/2018
- Data Sharing Across Sectors: Challenges and Opportunities: 8/29/2018

Podcasts: July 2, 2018, to August 1, 2019

- Designing a Family-Centered Care Plan for Children with Special Needs in Austin, TX: 7/2/2018
- A Shared Definition for Measuring Health Equity in Ontario, CA: 7/4/2018
- Integrating Data to Ensure "All Children Thrive" in Cincinnati, OH: 7/5/2018
- Connecting Hospitals and Food Pantries in Dallas, TX: 7/30/2018
- Public Health Innovation: What Is It and How Can It Be Achieved?: 8/20/2018
- An Equitable Approach to Community Heath Planning in Garrett County, MD: 9/17/2018
- Capturing the Community Voices Behind the Data in Denver, CO: 10/9/2018
- Partnering with Residents to Improve Asthma through Housing in Greensboro, NC: 10/29/2018
- How Can Neighborhood-Level Data Improve Health and Equity?: 11/25/2018
- Coordinating Health and Social Services in San Diego, CA: 12/12/2018
- Advancing Health Equity in Data Collection, Analysis, and Reporting: 1/8/2019
- Adding New Partners, Sectors, and Data to a Care Coordination System in Humboldt County, CA: 1/29/2019
- Empowering Communities to Discover and Use their Assets to Create Change: 2/20/2019
- Analyzing Health and Human Services Data to Maximize the Impact of Public Funds in Chicago, IL: 3/13/2019
- Bringing Multi-Sector Partners Together to Tackle Obesity in Hunterdon County, NJ: 4/1/2019
- Coordinating Care for Individuals Experiencing Homelessness in Chicago, IL: 4/23/2019
- BUILDing a Movement: Going Upstream to Address Health Disparities: 5/20/2019
- Using Privacy-Preserving Technology to Create a Continuum of Support for Families in Tulsa, OK: 7/5/2019
- Collaborating to Improve Care for Medicaid and Uninsured Populations in Staten Island, NY: 8/1/2019

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