

Framework for Multisector Alignment Research

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ABSTRACT

Context: Public health collaboratives are effective platforms to develop interventions for improving population health. Most collaboratives are limited to the public health and health care delivery sectors; however, multisector collaboratives are becoming more recognized as a strategy for combining efforts from medical, public health, social services, and other sectors.

Program: Based on a 4-year multisector collaborative project, we identify concepts for widening the lens to conduct multisector alignment research. The goal of the collaborative was to address the serious care fragmentation and conflicting financing systems for persons with behavioral health disorders. Our work with these 7 sectors provides insight for creating a framework to conduct multisector alignment research for investigating how alignment problems can be identified, investigated, and applied to achieve systems alignment.

Implementation: The multisector collaborative was undertaken in Maricopa County, encompassing Phoenix, Arizona, and consisted of more than 50 organizations representing 7 sectors.

Evaluation: We develop a framework for systems alignment consisting of 4 dimensions (alignment problems, alignment mechanisms, alignment solutions, and goal attainment) and a vocabulary for implementing multisector alignment research. We then describe the interplay and reciprocity between the 4 dimensions.

Discussion: This framework can be used by multisector collaboratives to help identify strategies, implement programs, and develop metrics to assess impact on population health and equity.

KEY WORDS: multisector collaboration, multisector research, public health

Public health collaboratives are effective platforms to develop interventions, facilitate information sharing, optimize coordination, and establish joint governance to achieve a health goal.¹⁻³ While most population health collaboratives are limited to the public health and health care delivery sectors, multisector collaboratives are becoming more

recognized as a strategy to improve population health and equity by combining efforts from medical, public health, social services, and other sectors.^{4,5} However, when 2 or more organizations collaborate to improve population health, a number of challenges can arise regarding coordination and effectiveness. To understand and address these potential problems, the Robert Wood Johnson Foundation Aligning Systems for Health initiative supports efforts to identify, test, and share what works to align health care, public health, and social services.³ As part of this initiative, the Cross-Sector Alignment Theory of Change Model aims to support implementation of sustainable multisector initiatives by activating 4 core components: (1) developing a shared purpose; (2) generating shared data to enable multisector coordination; (3) ensuring adequate financing; and (4) creating effective multisector governance.⁶ A critical component of the Cross-Sector Alignment Theory of Change Model is to ensure that multisector collaborative projects are sustainable⁵ over the long term, beyond project completion.⁷

The purpose of this article is to present a framework for conducting multisector alignment research for use by practice settings and to expand the

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definition of multisector research in public health. The framework builds upon the Theory of Change Model⁶ by operationalizing key components of multisector implementation research and describing their relationships to make actionable progress.

Methods

Multisector alignment research aims to discover and apply new evidence about ways of aligning the delivery and financing system to identify system-level strategies for improving the health of populations and equity.⁸ We present a framework for systems alignment consisting of 4 dimensions: alignment problems, alignment mechanisms, alignment solutions, and goal attainment. Our understanding of how to conceptualize a multisector alignment framework unfolded during a 4-year collaborative project. The collaboration consisted of more than 50 organizations representing 7 sectors: medical care, public health, behavioral health, law enforcement, jail, probation, and the emergency medical system. The collaboration was undertaken in Maricopa County, encompassing Phoenix, Arizona, the fifth largest city in the nation.

The goal of the collaborative was to address the serious care fragmentation and conflicting financing systems for persons with behavioral health disorders. Our work with these 7 sectors provides insight for creating a framework to conduct multisector alignment research for investigating how alignment problems can be identified, investigated, and applied to achieve systems alignment. This study was reviewed and approved by the Arizona State University Institutional Review Board.

Results

In working with the multisector collaborative participants, it became apparent that there is a lack of common definition, understanding, and application of alignment concepts, leading to confusion regarding the nature of an alignment problem and mechanisms. We begin by establishing common definitions for the following foundational terms: sector, multisector, systems alignment, and multisector alignment research. A *sector* is an area of the economy in which an organization shares the same or similar services⁹ while *multisector* involves 3 or more sectors of society.¹⁰ *Systems alignment* consists of creating multisector connections that are sustainable after the collaboration ends.³ *Multisector alignment* research is defined as methods and approaches to best understand ways to align multisector delivery and financing systems to improve population health status.

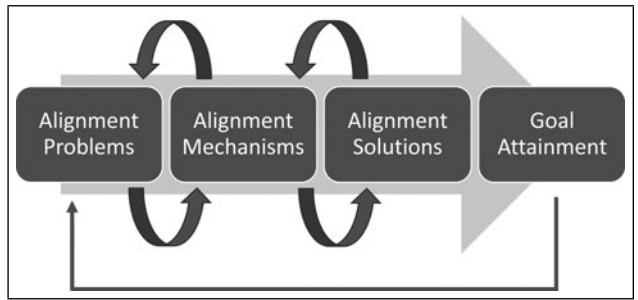


FIGURE Framework for Multisector Alignment Research

The Figure illustrates the Framework for Multisector Alignment Research. The framework consists of 4 dimensions that are defined as follows. An alignment problem is an issue caused by fragmented, uncoordinated, or conflicting approaches between multiple sectors. Alignment problems include but are not limited to persistent gaps in services between sectors, conflicting funding mechanisms, siloed reporting requirements, and disconnected information systems. An example illustrates how conflicting funding mechanisms contribute to an alignment problem and are exacerbated by different reporting requirements and disconnected information systems between sectors. In the beginning phase of our multisector collaborative, stakeholders identified poor care coordination for persons with serious mental illness (SMI) as an alignment problem. Specifically, the Phoenix Emergency Medical Services (EMS) system frequently serves persons experiencing a behavioral health crisis. The Phoenix Fire Department (PFD) is reimbursed only for transporting patients to EDs and is not paid for transporting patients to other care facilities (such as lower-level primary care, crisis intake facilities, detox care, and so forth). Such conflicting financing results in a circumstance where the PFD does not transport to other care settings that may be more appropriate, avoiding an unnecessary hospital admission.

The aforementioned example demonstrates how gaps in services can stem from conflicting funding mechanisms between sectors that often restrict care coordination, resulting in care fragmentation. These service gaps are further exacerbated by different reporting requirements and disconnected information systems that create difficulty tracking patient activity across multiple sectors. This limited ability to share information between organizations results in frequent communication disconnects leading to a lack of trust, cooperation, and coordination. For example, the county jail, the homeless management system, the Regional Behavioral Health Authority, individual clinics, and service providers, along with a variety of other organizations, all maintain records about SMI clients

that they serve, but these data are disconnected and not harmonized for informed decision making regarding care coordination. Systematic understanding of the overlap, duplication, and gaps in services between social service agencies, hospitals, and the EMS system cannot be done without a common patient identifier to track utilization between organizations. As a result, organizations serving persons with SMI in Phoenix lack the ability to track service use, share clinical information, or identify frequent utilizers between sectors.

Alignment mechanisms are the methods and techniques to engage stakeholders in the identification and analysis of the alignment problem as well as developing consensus on an alignment solution. Alignment mechanisms facilitate stakeholder interaction, perspective taking, and relationship building. Effective engagement of stakeholders provides a more holistic view and better understanding of multisector problems and their causes. The stakeholders for this project included individuals who represented various agencies, systems, and sectors that provided service to, or advocated on behalf of, adults with SMI in the greater Phoenix Metropolitan community. We utilized convenience and snowball sampling methods to identify a representative group of participants to engage in the multisector collaborative. The project was convened with a kickoff meeting to identify the parameters, scope, and activities to be undertaken. An ongoing series of regular meetings provided a context to build common ground and mutual understanding.¹¹

For this project, we linked and integrated multisector databases to perform multisector data analytics. As part of our multisector collaborative, we assembled and integrated 4 disparate databases to develop a multisector understanding of the utilization patterns for persons with SMI in the Arizona Medicaid program: (a) the Medicaid Claims and Utilization Data, (b) the Maricopa County Jail Booking Data, (c) Maricopa County Adult Probation Data, and (d) the Homeless Management Information System. The study focused on the time period April 2014 to 2016. A description of each database follows.

- a. *AHCCCS Medicaid Claims and Utilization Data*: Arizona's Medicaid program operates as the Arizona Health Care Cost Containment System (AHCCCS) and provides coverage to approximately 1.7 million members. The Arizona State University Center for Health Information and Research has been a community resource and partner for organizations and individuals seeking comprehensive health information, data analytics, and reporting for public, private, and research uses.

- b. *Maricopa County Jail Booking Data*: The Maricopa County Sheriff's Office (MCSO) manages the third largest jail system in the United States.¹² The Maricopa County Sheriff's Office jails are used to book and detain people arrested by all local jurisdiction police departments in Maricopa County.¹³ This publicly available data contain identifiers, dates, and violation charge data.
- c. *Maricopa County Adult Probation Data*: Data were obtained from the Maricopa County Superior Court, Office of Adult Probation, encompassing all individuals under community-based probation, as a condition of their sentencing. The Adult Probation Enterprise Tracking System holds more than 250 000 probationer records.¹⁴ The Adult Probation Enterprise Tracking System data include orders of the court, case information, risk assessments, previous history, drug use, military service, various assessments, and petitions.
- d. *Homeless Management Information System*: The Homeless Management Information System provides client-level data as well as data on the provision of housing and services to homeless individuals and families at risk of homelessness.

Linking health and nonhealth data at the recipient level is a formidable process. Unlinked databases do not contain common identifiers, varying in quality, accuracy, and availability.

The Table shows the results of 4 linked databases, describing the activity of individuals involved with Medicaid services, jail booking, and probation for Maricopa County, categorized according to SMI and non-SMI populations. The findings indicate that persons designated as SMI constitute 3.5% of all Medicaid individuals with claims yet almost 48% of those with jail bookings and 42% of individuals on probation.

Cross-sector data are rarely coordinated or integrated, which impedes the ability to trace individuals across the care continuum and limits full understanding of a multisector problem. This example illustrates how an alignment mechanism can serve as a catalyst, bringing together stakeholders invested in a common multisector set of problems that have resisted solution.

An *alignment solution* is a multisector consensus regarding an intervention and implementation of the intervention. An example of an alignment solution could be a change in policy or practice implemented by a sector, or multiple sectors, that integrates shared systems goals and approaches. The alignment solution leads to goal attainment between multiple sectors to achieve systems alignment. Alignment mechanisms

TABLE
Medicaid Members With Claims, Jail Booking, and Probation (April 2014 to March 2015)^a

	SMI	Non-SMI	Total	SMI, %
Individuals with Medicaid claims	22 328	615 822	638 150	3.5
Total claim values	\$276 026 641	\$10 835 921 843	\$11 111 948 484	2.5
Individuals in booking	3898	6554	10 452	37.3
Bookings	9918	10 873	20 791	47.7
Individuals in probation	1965	2748	4713	41.7

Abbreviation: SMI, serious mental illness.

^aExcludes individuals who were enrolled in Medicaid without claims.

can help further refine alignment mechanisms, creating a continual process improvement feedback loop to achieve goal attainment. Through multisector engagement and alignment mechanisms such as linking databases and data analytics, shared understandings are gained to arrive at widely supported solutions that are responsive to specific alignment problems.

Our multisector collaborative participants identified an alignment solution through a comprehensive review of findings from the multisector data analysis. As stated previously, our collaborative participants identified the EMS system as a pivotal interface linking the multisector organizations serving persons with SMI. A consensus recommendation was made by the stakeholders to prioritize attention on the EMS to improve care coordination for persons with SMI.

Goal attainment is a resolution of the alignment problem resulting in systems alignment and improved population health status. Goal attainment has 2 important features. First, consistent with the Aligning Multisector Systems Theory of Change, goal attainment results from permanent connections between sectors with lasting impact upon equity and population health. Second, the science of improvement informs us that equity and well-being are not end-state destinations but rather a continuously ongoing journey.¹⁵ Indicators of goal attainment should be matched to the specific alignment problems. The feedback loop in the Figure reflects the cyclical property of multisector goal attainment efforts.

An important component of goal attainment is multisector service alignment, consisting of solutions designed to rectify a specific alignment problem. In our collaborative project, the multisector service alignment consists of a plan to bring together key providers involved in the EMS with a focus on achieving better care coordination for persons with SMI. This multisector service alignment strategy involved the PFD, a crisis response network, mobile crisis teams, public health, and service providers. The goal of the collaborative was to achieve better coordination of care for persons with SMI who encounter the EMS system.

In summary, a multisector alignment problem precedes alignment mechanisms that lead to alignment solutions and goal attainment. There is also interplay and reciprocity between these 4 dimensions. Alignment mechanisms are utilized to illuminate the alignment problem as well as identify and further refine the alignment solution in a cyclical process to achieve goal attainment. The Framework for Multisector Alignment Research emphasizes the importance of engaging stakeholders in all phases of multisector research: defining alignment problems, identifying alignment mechanisms, creating alignment solutions, and improving goal attainment.

Discussion and Conclusion

Multisector systems alignment highlights the importance of going beyond the public health and health care sectors to build sustainable collaborations to improve population health and equity. The current emphasis on systems alignment in public health creates a need for multisector alignment research methodologies. These sectors can include but are not limited to public health, medical care, law enforcement, the court system, probation services, education, housing, and social services.

While multisector collaborations are effective in cultivating cooperation, they are inherently challenging and can fail without effective governance, adequate resources, a common goal with commitment from partners, and sustainable funding.¹⁶⁻¹⁸ New frameworks for multisector alignment research are needed to enhance the effectiveness of multisector research and understand the impact of systems alignment.

There are complex, dynamic flows between multiple sectors that are not well understood, with limited frameworks to undertake multisector alignment research,⁷ and far more work is needed for understanding how to achieve systems alignment.¹⁸ We propose a framework to guide multisector alignment research that identifies and defines the relationships between alignment problems, alignment

Implications for Policy & Practice

- Multisector alignment with public health and other sectors is essential to improve overall population health and equity. The public health system by itself cannot improve equity, well-being, or the health status of the nation. Leadership, cooperation, and participation from the education, business, public safety, criminal justice, and other sectors are required.
- Building sustainable multisector collaborations is one important component, among many, necessary to achieve lasting systems alignment.
- There are limited frameworks to undertake multisector alignment research.
- Multisector alignment research widens the lens to consider factors outside of traditional public health and health care settings for addressing the health problems faced by the nation.
- This article presents a framework for undertaking multisector alignment research and identifies 4 dimensions: alignment problems, alignment mechanisms, alignment solutions, and goal attainment.

mechanisms, alignment solutions, and goal attainment. The framework helps better understand the interplay of factors between various sectors that allow alignment mechanisms to be leveraged in more efficacious ways. The framework can help promote multisector integration with a specific emphasis on widening research methods to achieve systems alignment. The 4 dimensions in this alignment framework can be used by multisector collaboratives to help identify strategies, implement programs, and develop metrics to assess impact on population health and equity.

The public health sector and health care systems, by themselves, cannot improve equity, well-being, or the health status of the nation. Multisector alignment with other sectors is essential to improve overall population health and novel approaches are needed to implement multisector research.¹⁹ However, various sectors have great difficulty engaging in effective approaches to test alignment mechanisms between sectors.⁵ Multisector alignment research widens the lens to consider factors outside of traditional public health and health care delivery settings,²⁰ and the framework presented here can be used to guide multisector alignment research.

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