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Abstract

How does collective leadership within social networks resolve chronic and complex problems common
to communities? Unfortunately, sometimes it does not, but when it does, the outcome may be truly
extraordinary. We use a case study approach to explain how one Midwest community within the USA
applied collective leadership within a community network to reduce teen births. It took ten years of
what many identified as provocative media campaigns and comprehensive sex education programs to
reduce teen births by 65%, significantly exceeding the stated goal. Using Kotter's change model as a
backdrop, powerful strategies and provocative creativity reveal courageous leadership within a social

network of diverse people and organizations focused on improving the social well being of their community.

INTRODUCTION

In the nonprofit sector, collective leadership is advantageous to resolving complex social and cultural problems (Grint, [18]; Kolko, [24]; Kotter, [25]; Rittel & Webber, [35]). Brinkerhoff, Murrieta, and O'Neil ([4], para 1) broadly define collective leadership as "a group of people working together toward a shared goal." Collective leadership views communities as social networks where unity of purpose and success are achieved through shared power, trust, inclusivity, multiple perspectives, and diverse skillsets (Meyer, Gibson, & Ward, [29]; O'Neill & Brinkerhoff, [33]; Stroh, [38]).

Although collective leadership is valuable in resolving complex social problems (Kolko, [24]; Stroh, [38]), there exists a gap in the literature that describes how work gets done, which may be valuable to others working on similar problems. Thus, the purpose of this qualitative longitudinal case study taking place in Milwaukee, Wisconsin is to explain how collective leadership observed within a social network applied Kotter's change model to resolve a wicked problem.

Our approach is as follows. We begin by describing the problem of teen pregnancy within the United States, and specifically to Milwaukee. Next, we provide theoretical support for collective leadership, social systems networks, wicked problems, and change. Our methodology follows. Then, in our analysis of findings and discussion, we identify lessons learned, future research and limitations of the work.

TEEN PREGNANCY: PROBLEM DEFINITION AND TRENDS WITHIN THE UNITED STATES

According to the American Pregnancy Association ([1]), teen pregnancies are those occurring under the age of 20. For those countries reporting teen pregnancy statistics ages 15–19, the United States is reported as having the highest rate, numbering 614,000 pregnancies or 57 per 1,000 from the mid-1990s until 2011 (Guttmacher Institute, [20]; Sedgh, Finer, Bankole, Eilers, & Singh, [37]), indicating the severity of the problem nationwide. Recently the Department of Health and Human Services (DHHS) ([43]) reports a downward trend in rates from years 1990 to 2017 attributed to several factors, including welfare reform, tougher enforcement of child support, and increases in comprehensive sex education programs (Chamness & Tillett-Zinzow, [5]).

Regardless, the United States continues to have one of the highest teen pregnancy rates in the developed world (Guttmacher Institute, [20]). According to researchers (Guttmacher Institute, [20]; Sedgh et al., [37]), major reasons that rates remain high in the United States relate to general disapproval of teen sexuality and comprehensive sex education. 'Abstinence only' is often the educational norm, which by itself is less effective (Chamness & Tillett-Zinzow, [5]). A disproportionate share of teen pregnancies occurs in Black and Hispanic youth, leading to a cycle of poverty among the most disadvantaged and largest ethnic groups within the United States. Pregnant teens are more likely to drop out of school, use social welfare programs, and never become employed (Chamness & Tillett-

Zinzow, [5]). In 2017, for teens ages 15–19, Hispanics had a birth rate of 28.9 per 1,000 and Blacks had a birth rate of 27.6 per 1,000 while Whites had a birth rate of 13.4 per 1,000 (DHSS, [9]). Thus, programs that reduce teen births for Black and Hispanic groups remain attractive within the United States.

CASE DESCRIPTION

U.S. Census Bureau ([42]) reports the following. Milwaukee, the largest city in Wisconsin, has an estimated population of 595,351; 26.2% of its population is under the age of 18. Females comprise 51.9% of the city's total population. Predominate race estimates are 45.8% White, 38.9% Black, 18.4% Hispanic and 4.0% Asian as compared to 60.4% White, 13.4% Black, 18.3% Hispanic, and 5.9% Asian, nationwide. Black and Hispanic individuals comprise 57.3% of Milwaukee's population as compared to 31.7% nationwide. Persons in poverty in Milwaukee are 27.4% compared to Wisconsin's 11.3% and the United States' 12.3%.

At age 25, Milwaukee educational levels are 81.2% high school graduate compared to 90% nationwide and 90.4% statewide; 22.1% earned a bachelor's degree or higher compared to 34% nationwide and 26.8% statewide (Index Mundi, [22]; U.S. Census Bureau, [41]). Of the 100 largest U.S. cities, Milwaukee is the 11th most racially segregated (Sauter, Comen, & Stebbins, [36]). The FBI ranks Milwaukee fourth for violent crime compared to Midwest cities of similar population (Fox, [13]).

Problem magnitude

In 1991, when national and Milwaukee birthrates were the highest for ages 15–17, Milwaukee's birthrate was 95.8 per thousand compared to 36.8 per thousand nationwide (Herzog, [21]). According to Chamness and Tillett-Zinzow ([5], p. 7), in 2002, Milwaukee had the second highest percentage of total teen births as compared to the 50 largest cities in the United States and teen births were three times higher in Blacks than Whites. Due to disparities for both teens and their newborns, including high levels of cyclical poverty, family dysfunction, drug and alcohol abuse, violence, and high costs associated with teen births, estimated at $179 million annually for Milwaukee, community leadership was compelled to act.

The initiative

In 2005, the United Way of Milwaukee (UW), which already invested nearly six million dollars a year in youth development and in reducing teen births, commissioned Chamness Consulting, a research firm, to partner with community leadership to assess funding and program strategies to reduce teen births and to recommend evidenced-based practices showing the greatest promise (Chamness & Tillett-Zinzow, [5], p. 7). Work on the initiative began in 2006. The Public Health Department formulated a measurable goal supported by major stakeholders and announced in early 2008: *Reduce teen births, ages 15 to 17, by 46% over a ten-year period (2006–2015)*. Milwaukee focused on teens ages 15–17 as they were most negatively impacted by the problem (Chamness & Tillett-Zinzow, [5], p. 10). In 2004, the Milwaukee teen pregnancy rate ages 15–17 was 52.67 per 1,000 as compared to the nationwide rate of 22.1 per 1,000 for the same age group, which equated to 5.3% of Milwaukee teens ages 15–17 giving birth (Chamness & Tillett-Zinzow, [5], p. 10).

The outcome

In 2013, Milwaukee exceeded its goal with a 50% decrease in teen births, ages 15–17 (UW, [45]). In 2015, the rate decreased by over 65% from that of 2006 (UW, [45]). A 2018 external collective impact study reports:

In Milwaukee, the approach of increasing awareness of the issue, political will, and commitment to achieving a shared goal made it easier to implement the strategies (all evidence-based methods to prevent teen pregnancy) and in turn, create the systems changes. This has contributed to a reduction in teen birth rates among girls aged 15 to 17 in Milwaukee above and beyond national downward trends. (Lynn, Gase, Roos, Oppenheimer, & Dane, [27], p. 27)

Although teen births declined within the nation over the same time period (2006–2015), the percent of decrease in Milwaukee (66.09%) was significantly more than that of the nation (55.97%) (The Anne E. Casey Foundation, [40]). Additionally, the decline of 15% in teen births as reported in the five-year UW progress report (Angresano & Rourke, [2]) occurred during the same time that Milwaukee's poverty level increased (Glauber & Poston, [16]), when customarily increases in poverty levels have been linked to increases in teen birth rates (Chamness & Tillett-Zinzow, [5]). Moreover, the decline in teen birth rates occurred during a period when the violent crime index in the City spiked to its highest levels during years 2012 to 2016 (CityRating.com, 2019), the same time period where teen births showed the greatest decline; violent crime and teen births generally move in the same direction (Chamness & Tillett-Zinzow, [5]), making this another anomaly. These occurrences along with earlier reported city demographics suggest that the change actions taken had a significant impact in decreasing teen births well beyond the stated goal and the nationwide decrease. We next move to the literature review.

COLLECTIVE LEADERSHIP

Historical accounts describe collective leadership as successful centuries ago among Australian Aborigines in the late 1700s (Sveiby, [39]) and U.S. settlement women in the early 1900s (Gabriele, [14]). However, it was not until the early 2000s when the United States began to seriously consider it (Denis, Langley, & Sergi, [8]; Grint, [19]). As globalization increased and problems became more complex, the United States along with several other countries began to recognize the value of more inclusive leadership, such as collective leadership.

In their seminal work where they refer to what Fletcher ([12]) first describes as "leadership in the plural," Denis et al. ([8]) identify four distinct collective leadership streams. Because our observations included each stream, we chose this model to explain how leadership worked in unison to achieve major change. The first stream, shared leadership for team effectiveness, includes integrated leadership (Bono, Shen, & Snyder, [3]; Crosby & Bryson, [7]; Fernandez, Cho, & Perry, [11]; Ospina & Foldy, [34]), which focuses on the collaboration of diverse groups across system boundaries to resolve complex public problems for the common good. The second stream, pooling leadership at the top to lead others, includes "executive constellations," such as dyads and triads, who assume responsibilities for teams existing within community networks, such as that described by integrative leadership. The third stream, spreading leadership across levels over time, engages leadership at all levels within social entities and across borders encouraging participation across the network. According to Edwards ([10]) and Kotter ([25]), diffusion of leadership functions is key in successful major change initiatives, inviting

an influx of innovation at all levels to resolve complex social and cultural problems. The last stream, producing leadership through social interaction, views leadership as more about participation and collectively creating a sense of direction than about control and exercising authority" (Denis et al., [8], p. 254). Here, leadership is a dynamic process created and enacted through social interactions influenced by the situation (Grint, [17]; Lynch, [26]; Uhl-Bien, [44]).

SOCIAL NETWORKS

Social networks evolved from social systems theory (Meadows, [28]; Norlin, Chess, Dale, & Smith, [32]; Stroh, [38]), which is based on the idea that, in instances involving complex problems within systems, we might learn more from studying between group interdependencies relevant to the problem rather than individual group resolutions. Meadows ([28], p. 11) describes a system as "an interconnected set of elements that is coherently organized in a way that achieves something." The intention is to optimize the whole by improving the relationships between parts (Meadows, [28]; Rittel & Webber, [35]; Stroh, [38]). Systems analysis often works well for researchers and practitioners engaged in social network change (Kolko, [24]; Meadows, [28]; Norlin et al., [32]; Stroh, [38]). In their review of 25 community initiatives, collective leadership within social networks was shown effective in implementing and sustaining major change processes (Lynn et al., [27]).

Using this study as an example, each of the groups in Figure who are working within and across sectors to reduce teen births constitute a social system, and the connections between them constitute a social systems network. By applying change theory and identifying relationships between systems, systems thinkers work toward turning interdependencies into leverage points to optimize resolutions.
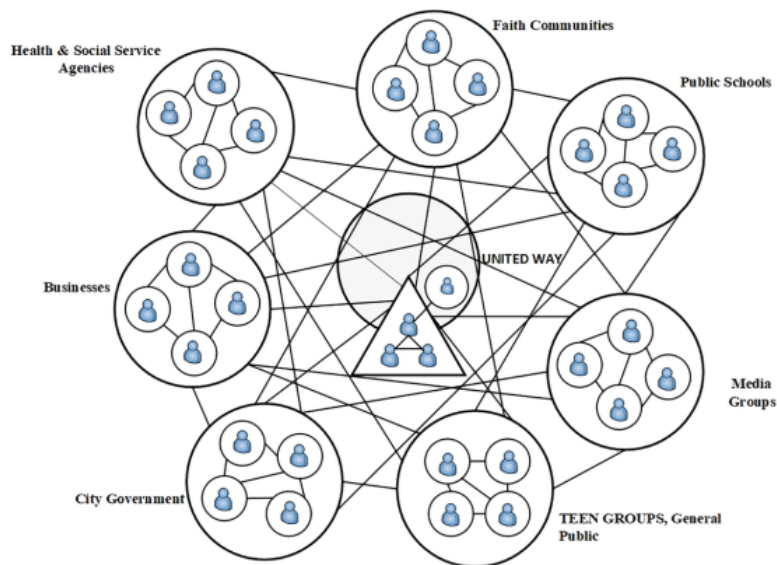
Figure 1. Collective leadership structures embedded within a social systems network

Wicked problems within communities

The term "wicked problem" was first identified in the literature by Rittel & Webber ([35]) in reference to public policy problems. The concept evolved across sectors and has become common across disciplines. Kolko ([24]), an interaction designer, defines a wicked problem as a complex social and/or cultural problem resistant to resolution characterized by the interconnectedness it shares with other

similar problems. He identifies four reasons resolution is difficult: (a) incomplete or contradictory knowledge; (b) number of people and opinions involved; (c) large economic burden with no permanent solution; and (d) the interconnected nature of one wicked problem with others (Kolko, [24], p. 10). We would add that the dynamic nature of these problems and the unpredictability of human behavior contribute to their complexity.

Kotter's eight step change model

Harvard Business Review first published Kotter's change model in 1995. The next year, it was explained in detail in his book, *Leading change*. As we analyzed the case and reviewed various change models, it became evident that Kotter's work served as the best guide in explaining the changes occurring, which was the first reason we chose it. Kotter ([25]) identifies the need to change behavior as a leadership function, which is the second reason we chose the model as our focus was on leadership. Kotter describes leadership as "a set of processes that creates organizations and/or *adapts them to significantly changing circumstances*" [emphasis added] (p. 28) while he describes management as "a set of processes that can keep a complicated system of people and technology running smoothly" (p. 28). Kotter ([25]) advocates that to gain commitment for change, appealing to the heart (feelings) is more important than appealing to the head (facts). Leadership appeals to the heart by communicating a compelling vision, aligning people with the vision and inspiring them to overcome obstacles to achieve it (Kolko, [24]).

Third, it takes a leadership coalition to resolve complex problems, which aligns with collective leadership. Kotter ([25]) states, "A powerful enough guiding coalition with sufficient leadership is *not* [emphasis added] created by people who have been taught to think in terms of hierarchy and management" (p. 30). Collective leadership suggests the predominance of less hierarchical power structures (Collinson, [6]; Denis et al., [8]; Grint, [17]). Finally, Kotter's model is well-established, being one of the most seminal works on change (Gibson, [15]; Mulholland, [31]). The eight steps identified in the model are: Establish a sense of urgency, create a guiding coalition, develop vision and strategy, communicate the change vision, empower broad-based action, generate short-term wins, consolidate change and produce more gains, and anchor new approaches in the culture (Kotter, [25], p. 23).

METHODS

This embedded single-case design includes multi-level units of analysis evident in collective leadership structures and numerous entities within the network (Yin, [46]). The encompassing boundary is a social system network where a person is the smallest unit within it (Yin, [46]). Single case studies are appropriate when they meet any of five conditions: *critical*, *unusual*, *common*, *revelatory*, or *longitudinal* cases (Yin, [46], p. 49). First, this case study is critical in that it is grounded in theoretical application of collective leadership, social systems, social networks, wicked social problems, and Kotter's change model. Second, it is longitudinal where progress toward measurable goal achievement was reported annually over a 10-year period. Though a single case study design faces similar validity and reliability challenges plaguing single experiments, with proper design tactics such as theoretical support, use of multiple sources of evidence, and use of key informants for accuracy checks, the challenges are reduced considerably (Yin, [46]).

Sources of case specific data included: (a) a comprehensive research report on teen pregnancy (Chamness & Tillett-Zinzow, [5]); (b) a comprehensive research report on progress to goal at the 5-year mark (Angresano & Rourke, [2]); (c) Serve Marketing quarterly media campaigns fully retrievable from https://www.unitedwaygmwc.org/Teen-Pregnancy-Prevention-Campaigns; (d) a Spark Policy Institute collective impact study including Milwaukee's initiative compared to 25 others (Lynn et al., [27]); (e) local news reports; (f) data from a 2018 Oversight Committee (OC) focus group; (g) recorded and transcribed 2018–2019 interview data from three 1-hr interviews with members of the OC; and (h) Milwaukee Public Schools (MPS) Human Growth and Development Curriculum (MPS, [30]). Table lists specific practices in project design aligning with what Yin ([46]) refers to as successful design tactics that serve to increase the validity and reliability of project work.

Practices observed in the project design to enhance validity and reliability

Validity/Reliability	Practices Observed	Rationale and Occurrence
Construct validity	Detailed research report on the significance of the problem, which included 58 interviews of community agencies nationwide and statistics for comparison purposes; an external consulting firm prepared report.	Used for project planning and to inform the public of the severity of the problem prior to the onset of the initiative, creating a sense of urgency.
	Public awareness surveys conducted pre-initiative and 6 months into initiative.	To measure the effects of media campaign on community awareness of the problem
	Clearly articulated measurable goal: Reduce teen births, ages 15 –17, by 46% over a 10-year period (2006–2015).	Goal publicized to measure progress of initiative based upon annually reported statistical data from the city's health department.
	Health Department's annual report on progress toward goal.	To retain public interest and to inform; progress toward goal publicized at annual project meeting.
	Detailed and comprehensive five-year progress report that included comparative statistics and details of the initiative.	Used to inform the public and those involved with the initiative of the progress made 5 years into the initiative.
	New media campaign every 3 months for 10 years.	To engage target audience and to change behavior of that audience.
	On-going public media campaign regarding initiative activities.	To inform public and to create and maintain a sense of urgency.

Internal Validity	Reliance on logic model.	To identify strategies and associated resources needed at the onset of the initiative.
	Use of pattern matching.	
	Explanation building.	To identify in logic model specific activities occurring across sectors that achieved pre-identified intermediate outcomes.
	Exploration of rival explanations.	
		To differentiate this initiate from previous failed initiatives by highlighting key differences.
		To identify and assess other explanations of progress toward outcome achievement.
External Validity	Reliance on pre-initiative data collection and reporting by external consulting firm.	The magnitude of the problem became evident, gaining public support for the initiative, indicating the importance of this pre-initiative step for future initiatives.
	Reliance on collective leadership practices across sectors.	
	Reliance on an existing social systems community network.	The magnitude of the cross-sector changes benefited from collective leadership across sectors, which provided a model for similar projects.
	Reliance on credible change practices.	
	Reliance on a backbone organization. Reliance on an effective funding structure.	Multiple pre-existing social systems formed a coalition to successfully implement critical changes in behaviors and systems. Documented change practices across systems made the initiative transparent for the benefit of future initiatives.
		For talent, skills and resources to coordinate the work of diverse groups involved with the initiative.
		Sustainable community impact models require considerable financial resources.

Reliability	External consultant used to aid in pre-initiative data collection and reporting protocols.	To lessen the likelihood of errors and biases in the data collection and reporting.
	Interim and post initiative statistics collected and reported by the same body (Milwaukee Health Department).	To follow the same protocol and lessen the likelihood of errors and biases in data collection and reporting.
	Sustained edgy media campaigns to teens throughout the initiative.	A new campaign was offered by the same media group (Serve) every quarter for the duration of the initiative.
	Local media sustained coverage for the duration of the initiative.	
	Application of credible change model.	Created a sustained public awareness of the problem, the goal, actions taken and progress toward goal.
		Used to measure effectiveness of change process upon completion of the initiative.

ANALYSIS OF FINDINGS

Because of significant sociological, health and economic risks for teen moms and infants, Milwaukee supported a goal to reduce teen births ages 15–17 by 46% over a 10-year period (2006–2015), which would remove the city from the top 10 cities with highest teen birth rates in that age group (Chamness & Tillett-Zinzow, [5]). The UW formed a coalition to meet the challenge. Nearly 3 years before the target date, Milwaukee exceeded its goal, reporting a 50% decrease in teen births. By 2015, Milwaukee's teen births decreased by over 65% from that of 2006. Though teen births declined within the nation as a whole, despite significant demographic challenges faced by the city, the 66.09% rate of decrease in births among teens was significantly higher than the nationwide 55.97% rate of decrease from 2006 to 2015 (The Anne E. Casey Foundation, [40]), suggesting that the 10-year initiative had a significant impact on outcome achievement.

Collective leadership in action

Nearly 60 **s**ocial service agencies, media groups, businesses, public schools, city government, faith communities, and teens worked collaboratively for 10 years. Project teams met monthly while the OC met quarterly; OC composition included project team leaders and three appointed co-chairs.

A triad facilitated the work of project teams. The triad had interrelated job functions based upon positions held within the community and expertise needed for project success. The UW served as the

"backbone support organization" (Kania & Kramer, [23]). In their experience with collective impact initiatives, which Kania and Kramer ([23], p. 39) define as "long-term commitments by a group of important actors from different sectors to a common agenda for solving a specific social problem," they identify backbone support organizations as pivotal to the success of major community initiatives, as it is the people within these organizations who have the talent, skills, and resources to coordinate the work of diverse groups. Thus, the UW was responsible for funding and bringing community groups together, implementing a data-driven project based upon evidence-based findings from research done by Chamness Consulting (Chamness & Tillett-Zinzow, [5]). The UW project director was responsible for the project teams within the UW. Along with the UW director, the other two triad members who served as co-chairs for the OC oversaw the remaining project teams.

The second triad member was a skilled media executive for the community's major newspaper and facilitated media campaign work. One media campaign focused on changing targeted behaviors of teens while the other focused on keeping the public informed of the severity of the problem, maintaining a sense of urgency.

Completing the triad was the health commissioner who was responsible for the Public Health Department, which took the initiative of collecting and reporting outcome data annually. Frequent interactions with the mayor's office kept city government informed of progress, which the media publicized routinely.

As the culture of community groups at all levels and within all sectors needed to change to achieve the outcome, ongoing social interactions of leadership across sectors was paramount. In addition to the team and OC structures, more informal communications, referred to by two interviewees as "offline communication," was ongoing.

During interviews, we were fortunate to encounter two examples of leadership occurring through interaction. The first entailed the solicitation of evaluations of media campaigns from local teens by media campaign experts. One interviewee said, "I would keep asking kids that I was meeting with for another campaign to take a look at a few ads and I would video their responses and show them to the OC" (interview data, 2018). The videos of teen responses influenced OC members to support more edgy campaigns. The second example, from another interviewee, spoke to engaging major supporters of the UW in unique ways that appealed to their priorities. "So, if you don't think that it's ok for teens to have sex, I get that.... Can you at least acknowledge that it's not ok for adult men to have sex with teenage girls and that we need to address that?" A donor's response might be, "Okay, I agree we have to do something about that."

The wicked problem of teen births within social systems

We found Kolko's ([24]) work on social and cultural problems useful for three reasons. First, he focuses on dyadic social interaction between people seeking to resolve wicked social problems, which is critical to building successful cross-boundary relationships (Norlin et al., [32]). For example, the media campaign targeted toward teens was partially developed based upon ongoing interactions between media experts and teens. Second, Milwaukee demographics link teen births to both social and cultural circumstances, important factors to consider in planning change. Third, resolving wicked social

problems requires empathy and compassion from change agents. To illustrate, two interviewees felt compelled to work on reducing teen births due to past personal experiences.

Another feature of wicked problems is uniqueness, emphasized by an interviewee who stated, "It's not like you can take what we did and place it elsewhere because every community is different" (interview date, 2019). Moreover, as the number of interrelated social problems surfaced over time, wicked problems were defined over time. For example, one of the puzzling aspects of the case is that the reduction in teen births has *not* improved high school graduation rates, indicating other related problem involvement. Finally, wicked problem resolutions often have enduring effects, which may be effective, ineffective, or even damaging, which is why sustained collective assessment within a social system is critical (Kotter, [25]). The simple concept map in Figure identifies practices shown effective in reducing teen births (Chamness & Tillett-Zinzow, [5]). Its primary purpose is to expand knowledge of how to reduce teen births by exploring interdependent influences within the social system, using these interdependencies as leverage points.

Kotter's change model
We conclude our analysis by explaining how leadership applied Kotter's ([25]) change model throughout the change process.
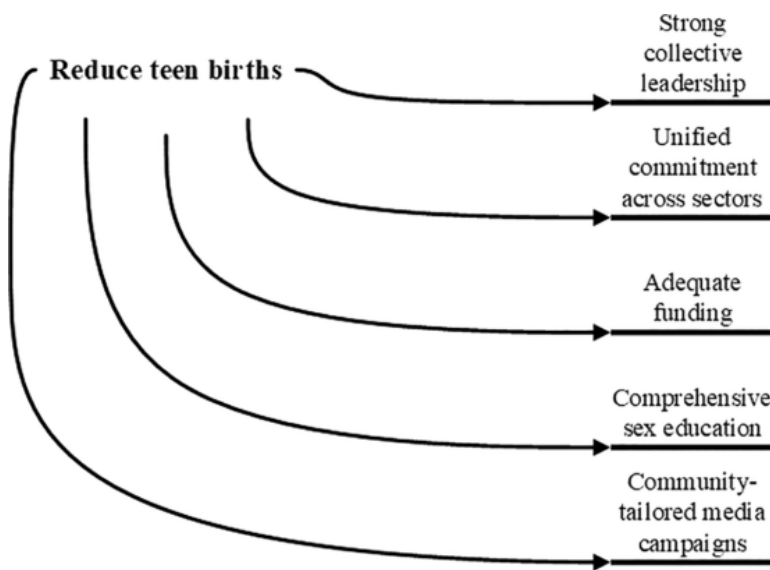

Figure 2. Known strategies that reduce teen births applying systems thinking; potential interdependencies between strategies are explored as potential leverage points in reducing teen births

Establish a sense of urgency
Urgency drives collaboration, cooperation, and commitment to major change (Kotter, [25]). That sense of urgency was sustained for over a decade. First, the initial *If Truth Be Told* (Chamness & Tillett-Zinzow, [5]) report clearly identified the magnitude of the problem by relating it to significant increases in violent crime, estimated long-term costs for each child born to a teen, and cyclical social problems of sexual victimization, child abuse, family dysfunction, and poverty. Second, two sustained public media campaigns drove the recognition of the seriousness of the problem. For example, early in the campaign, a large community group received an envelope stating, "Important Taxpayer Information." Inside the envelope was an invoice listing the cost of $92,394 for one infant born to a

teen. Third, a quarterly series of media campaigns targeted teens for 10 years. The pregnant boy campaign, for example, emphasized that teen births were not a problem to only girls whereas the statutory rape campaign targeted sexual victimization in that "71% of teen births [in Milwaukee] are fathered by men over the age of 20" (UW, [45]). According to Serve Marketing, to change behavior of this nature people needed to feel "wildly uncomfortable." We suggest visiting the campaign site to see how campaigns contributed to this feeling (https://www.unitedwaygmwc.org/Teen-Pregnancy-Prevention-Campaigns).

Create a guiding coalition
No one individual can enact major change; a powerful force is needed (Kotter, [25]). Much has been said regarding collective leadership models in place and the competency of leadership involved. As one interviewee (2018) stated, "We had the best people at the table. I don't think either of the co-chairs missed one OC meeting." The OC was given autonomy to act boldly and creatively, and did so without losing sight of the goal; they drove the process, acting courageously by taking calculated risks and repeatedly addressing resistance to change. Experienced leadership with trust-building capacity, extensive expertise, credibility and both relationship and position power were integral to the change process.

Develop a vision and strategy
A vision should have five qualities: (a) paint a picture of the future; (b) appeal to the head and heart; (c) be attainable; (d) be focused; and (e) be easy to communicate (Kotter, [25]). For this project, the vision and the goal were one in the same, which made both measurable: *Reduce Milwaukee's teen birth rate for 15 to 17 year olds by 46% by 2015*. Rather than teen pregnancies, which are far more difficult to measure accurately, teen births were reported. The goal was determined by the health department and progress to goal was measured and reported annually. It was considered a stretch goal, higher than that published for other teen birth reduction programs across the country but determined achievable over a 10-year period. The goal was focused and easy to communicate. The campaign appealed to the heart by clearly communicating the negative effects that teen births had on children and the community while it appealed to the head by reporting on evidence-based practices.

Leadership worked from a logic model, which is a visual representation of strategies, inputs/resources, activities, and outcomes (Angresano & Rourke, [2], pp. 22–23). An example of one strategy is illustrated in Figure.

Example from logic model

Communicate the change vision
The vision was communicated in local media outlets (radio, local news TV stations), on posters at bus stops, on tags on telephone poles, in reports, on social media and in quarterly meetings; all representing high impact advertising for low cost. Leadership walked the talk by communicating the

vision through actions. They made it clear during interviews and meetings that activities of the initiative were data-driven and had been effective in similar initiatives across the United States.

Resistance was inevitable and some community meetings were challenging. However, leadership continued to address tough questions. As one interviewee (2019) put it, "Maybe you don't think it is okay for teens to access contraception, but I think you do care that adult men are preying on young girls. I think we can come together around that." The OC resisted certain media campaigns. However, as one interviewee (2019) stated, "The UW stood up to the group saying, 'we considered it, we researched it, we understand your issue, but we are still going to move ahead with it.'" The most successful strategy in fighting resistance was respectfully relating actions to outcome.

Empower broad-based action
Kotter ([25], p. 105) makes the statement, "I think the idea of helping more people to become more powerful is important." One of the advantages this initiative had is its pre-existing broad base of support from nearly 60 non-profit agencies. Second, the initiative had the same three people in the triad positions for 11 years, which led to continuity and consistency in leadership. Third, businesses and individuals financially supported the initiative. Serve Marketing donated more than two million dollars to its teen media campaign and the Milwaukee Journal Sentinel donated thousands of dollars to the public media campaign. Fourth, the mayor's office publicly supported the project. Fifth, MPS developed a comprehensive growth and development curriculum that continues to function today despite the state supporting an "abstinence only" curriculum.

Generating short-term wins
Progress was communicated in several ways. First, the large social network provided a natural path to publicize short term wins. Second, media campaigns kept the public informed of wins. Third, OC meetings were used to celebrate short term wins. As one interviewee stated, "From an internal standpoint, when you do good work such as this, it keeps the group energized."

Consolidate change and produce more gains
Most of us have not yet learned how to introduce major change into systems, which is extremely time-consuming and difficult (Kotter, [25], p. 142). The extent of these changes, even when consolidated, requires time and resources. One of the project strengths is that leadership realized this would be the case and planned accordingly from onset.

Anchor new approaches in the culture
Changes in norms realized at the conclusion of major change are often influenced by results achieved (Kotter, [25]). It takes several years to determine whether changes will take root. This initiative formally ended with a "thank you" public media campaign. Although too early to determine whether progress will continue, a bold goal of reducing teen births another 50% by 2023 has been set (interview data, 2019).

DISCUSSION

The purpose of this case study was to explain how collective leadership within a social network successfully engaged Kotter's model to resolve a wicked problem. We rely on Yin's ([46]) case methodology to conduct the study. From our work, we identify several replicable factors that

attributed to its success. These include (a) realistic timeframe; (b) evidence-based strategies; (c) cultural sensitivity; (d) persistent media campaigns; (e) measurable goals; (f) financial resources; (g) proven change strategies; and (h) honed leadership practice.

Lessons learned

As Kotter ([25]) makes evident, when multiple interdependencies exist, major change requires a strong leadership coalition. The coalition described gave the project the broad-based bandwidth needed to succeed in a community of 600,000. To replicate similar change, size of community, magnitude of problem, number of agencies engaged in resolution and financial resources are important considerations.

Second, leadership was united in respectfully quelling resistance promptly by reminding resistors of the shared outcome, creating a strong sense of unity. Third, leadership took the time to know major stakeholders in order to engage them in ways they felt most compelled to provide support. Again, this encouraged unity among stakeholders.

Fourth, the focus on unconventional campaigns to prevent teen births was evident. Finally, nonprofit agencies focused on supporting moms and infants continued to be funded. This is important as moms and infants need that support and the agencies providing it need to remain engaged in the initiative.

Future research and limitations

Several unanswered questions remain. For example, although teen births have significantly decreased over the past 12 years, high school graduation rates have not increased, seemingly counterintuitive based upon previous research. Second, sexually transmitted diseases are on the rise. Third, violent crime rates remain high. The complexity of these interrelated problems offers further opportunities for study.

A study limitation includes inability to replicate certain actions as every community is unique. Recall the interviewee who said, "It's not like you can take what we did and place it elsewhere because every community is different" (interview data, 2019). Moreover, the analytic ability of contrast and comparison in a single case study is absent.

CONCLUSION

The magnitude of social problems impacts all of us making them worthy of our attention. Yet collaborative work unites us in ways that privilege us to grow while serving the greater good. Our hope is that the work of those involved in this 10 year initiative shared within this study is of value to those who engage in resolving similar challenges for the greater good.

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