

Literature Review for the Minnesota HIV Strategy

KEY TAKEAWAYS RELATED TO THE PRIORITIZED TACTICS FOR 2019

Literature Review for the Minnesota HIV Strategy

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Introduction

The Minnesota HIV Strategy Advisory Board prioritized a set of 10 tactics for implementation in 2019 as part of the Minnesota HIV Strategy (the Strategy). Wilder Research conducted a literature review to identify research to support and inform the implementation of these tactics. This literature review focuses on research conducted in the United States in the past 10 years (2008 – 2018). It should be considered a broad overview of recent research pertinent to the prioritized tactics, rather than an exhaustive or comprehensive assessment of all research relevant to each tactic. This review does not restrict its focus to research that was conducted with specific demographic populations, and it includes research that uses a variety of qualitative and quantitative methods.

Below is a summary of key takeaways from HIV prevention and care research, as well as recommended areas for further exploration. A separate summary is provided for each tactic. Two of the 10 tactics were excluded from the literature review because they focus on administrative efforts for which research evidence is not needed.

A reference list for all cited resources is located at the end of this document.

Summary of findings

Goal 1:

Prevent new HIV infections

Tactic 1a. Implement provider education and training. The training should benefit all types of providers (e.g., primary care doctors, specialists, nurses, interpreters, etc.). The training should focus on evidence-based, behavioral and biomedical interventions for HIV prevention and care as well as cultural competence.

Research staff reviewed 12 articles that evaluated the effectiveness of training and education regarding HIV/AIDS for providers or provided recommendations or best practices for implementation. These articles evaluated training for various types of providers, ranging from infectious disease specialists to primary care providers to dentists to non-clinical providers. They covered different types of training and educational approaches – the specific details of the trainings can be garnered from the cited articles.

Key takeaways

Multiple studies have shown that provider training for evidence-based HIV prevention and care interventions can be effective. Some key takeaways from these studies include:

- Many providers lack accurate knowledge of pre-exposure prophylaxis (PrEP) a daily pill taken by people who do not have HIV in order to prevent infection (Seidman, Carlson, Weber, Witt, & Kelly, 2016). Lack of knowledge about PrEP is the largest barrier to prescribing (Clement

et al., 2018; Seidman et al., 2016). Brief training for primary care providers can improve their PrEP prescribing behaviors (Clement et al., 2018).

- Training for HIV health care providers around identifying risk and providing prevention messages to their HIV-positive patients results in increased prevention conversations (Rose et al., 2010) and a reduction in patients' HIV transmission risk behavior (Dreisbach et al., 2014; Rose et al., 2010).
- Remote consultation and mentorship for providers in rural or underserved areas via a video-based program based on the Project ECHO (Extension for Community Healthcare Outcomes) model can significantly improve providers self-assessed clinical skills related to HIV care, and can increase their feeling of connectedness to an HIV community of practice (Wood et al., 2016).
- Intensive mentoring for minority-serving clinicians can result in self-reporting improvements in knowledge and skills needed to diagnose, treat, and prevent HIV infection. Such mentoring can also improve self-reported clinical practices related to HIV prevention and care (Wagner et al., 2017).
- Training for social and public health service providers who work with substance-using clients improved their performance on HIV prevention strategies, including sexual risk assessment, risk reduction counseling, condom demonstration, and HIV testing referral, and use of a greater number of these strategies (Pinto et al., 2018).
- Training for providers who work with older adults about HIV and aging increased their knowledge about HIV risk and symptoms in this population (Seidel, Karpiak, & Brennan-Ing, 2017).

General recommendations for designing and implementing training include:

- Active learning methods (relative to didactic lecture-style approaches) in which trainees take on a participatory role in their learning help providers to feel competent and confident providing care to their HIV-positive patients (Gallagher, Hirschhorn, Lorenz, & Piya, 2017).
- Tension exists between the need to ensure that training is well matched to the specific skills and experiences of providers and to offer training that can be broadly applicable to multiple types of providers (Gallagher et al., 2017; Owczarzak & Dickson-Gomez, 2011). There are benefits and downsides to both approaches.
- Training should recognize the value of expertise and feedback shared by community-based organizations and providers regarding effective practices and interventions, rather than using a top-down approach (Owczarzak & Dickson-Gomez, 2011).

The research described above focuses on education and training for active providers rather than for pre-licensure nursing and health professions students. Very little research has explored HIV education and training for the latter population. The existing research has not explored the correlation between these interventions and care practices of providers after they transitioned to practice post-licensure. Furthermore, no study focused on the impact of the intervention on care provided to people living with HIV (PLWH) after graduation (Phillips et al., 2018).

Recommendations for future investigation

The literature review did not identify any articles or reports that described the effectiveness of provider education or training on providers' cultural competence. This is an important area for further investigation. This review did identify a resource that includes promising practices for working with members of various cultural communities (National Minority AIDS Education and Training Center, 2009). This compendium could prove useful when designing training intended to improve the cultural competence of providers.

Tactic 1b. Implement messaging campaigns, advertising, and PSAs to increase awareness of HIV and increase knowledge about evidence-based, behavioral and biomedical interventions for HIV prevention and care. Tailor content and delivery of messaging to meet the needs of specific communities and regions.

Research staff reviewed 12 articles related to messaging campaigns, advertising, and PSAs to increase knowledge about evidence-based, behavioral and biomedical interventions for HIV prevention and care. Some of these articles collected insight from specific communities about preferences for messaging campaigns, and some actually evaluated the effectiveness of such a campaign to increase knowledge or change behaviors. Additional details about the contents and delivery of the messaging campaigns that were implemented can be garnered from the cited articles.

Key takeaways

Few studies have demonstrated the effectiveness of messaging campaigns in the United States within the time frame of interest (2008 – 2018). This may be, in part, because it is difficult to separate out the effect of a messaging campaign from other potential factors (Romer et al., 2009). More often, studies present findings from formative evaluations that describe the qualitative insights and recommendations from community members about how to design and implement messaging campaigns.

Insights and recommendations about how to design and implement messaging campaigns varied by populations of interest. Some examples of feedback from specific communities are listed below. When designing a campaign, it is important to acknowledge that a “one-size-fits-all” approach will likely not be effective (Kingdon et al., 2013). Members of the target populations should be involved in the design of messaging campaigns to ensure the content and delivery are respectful, clear, and impactful.

- Black and Latina women expressed preferences for messaging that use current technology and social media platforms such as Facebook and Twitter (Chandler-Coley, Ross, Ozoya, Lescano, & Flannigan, 2017; Hood, Shook, & Belgrave, 2017). Placement of messages on the internet that can be accessible via mobile technologies was an appropriate means of HIV intervention for youth (Dowshen, Lee, Lehman, Castillo, & Mollen, 2015; Muessig et al., 2013).
- Individuals from multiple communities expressed desire for relatable messages and depictions of individuals they could identify with (Chandler-Coley et al., 2017; Colarossi, Hazel, Collier, DeSouza, & Pappas, 2016).
- Young black men and women recommended positively framed messaging that includes some humor to catch people's attention (Hood et al., 2017; Wright, Fortune, Juzang, & Bull, 2011).

- Young black men and black and Latina women disliked messaging campaigns that portrayed members of their community in potentially stigmatizing ways (Colarossi et al., 2016; Wright et al., 2011).
- Placement of messaging is important. While young men who have sex with men (MSM) were most often exposed to messages on the internet, they noted that they were more likely to pay attention to HIV prevention messages at a health clinic or doctor's office or in an educational class (Kingdon et al., 2013).
- Statistics presented in messages should be easy to understand. MSM of color were less likely to believe messages when they didn't fully understand the presented statistics (Mimiaga et al., 2016).
- MSM of color expressed concern that messaging about PrEP could provide a false sense of security, and messaging about PrEP should be presented as a supplemental measure rather than a replacement for condoms (Mimiaga et al., 2016). This differed from perspectives shared by black and Latina women who did not want messaging about PrEP to include information about condoms or STD testing (Collier, Colarossi, & Sanders, 2017).

Only a few studies assessed the effectiveness of messaging campaigns on individuals' knowledge, beliefs, or behaviors related to HIV prevention.

- Social media and mass media campaigns targeted toward youth may improve their knowledge and beliefs about HIV prevention behaviors (e.g., beliefs about condom use; Romer et al., 2009) and may increase rates of testing for HIV and other STDs (Dowshen et al., 2015).
- Messaging targeted toward injection drug users via posters and newsletters may reduce their HIV-related injection risk behavior (Gibson et al., 2010).
- Social marketing to increase condom use and HIV testing among heterosexual Latino men may improve behavioral and cognitive variables that may reduce their risk for HIV infection, such as increased perception of HIV risk, knowledge of testing locations, and condom carrying. Within the subgroup of heterosexually identified Latino MSM, social marketing campaigns may reduce risk behaviors such as unprotected vaginal or anal sex (Martinez-Donate et al., 2010).

Recommendations for future investigation

The review did not identify any information about messaging preferences or effectiveness of messaging campaigns among certain demographic communities that are hard-hit in Minnesota, such as African-born communities and Native American communities. Further investigation to uncover any existing evidence for these communities would be valuable. However, even for racial, ethnic, and sexual identity communities where research has been conducted, findings come from geographic locations, socioeconomic climates, and cultures that are quite different from Minnesota (e.g., New York, NY; San Diego, CA; Philadelphia, PA). Formative work that integrates the voices and recommendations of cultural communities in Minnesota is critical to ensure that messaging campaigns will be well suited to specific communities.

Tactic 1c. Increase education and outreach to culturally specific communities.

Research staff reviewed 24 articles that described the development of outreach or educational interventions for culturally specific communities and/or evaluated these interventions. This is an especially broad topic and an additional, more narrowly directed literature review should be conducted as specific types of education or outreach in particular cultural communities are considered. Additionally, some of the key takeaways overlapped with those identified for Tactic 1b focused on messaging, as messaging is one specific way of conducting outreach and increasing education in communities.

Key takeaways

A key takeaway from the review of relevant literature was the critical importance of tailoring education and outreach to the specific communities for which it is intended. Existing knowledge of HIV and beliefs about HIV risk vary greatly by community. For example, black women born in the U.S. may hold different perceptions of HIV risk than foreign-born black women (De Jesus, Taylor, Maine & Nalls, 2016); black women have been found to ascribe HIV risk to individual-level behaviors and choices while African-born women attribute it to conditions of poverty and survival. Additionally, behavioral and social norms vary greatly by population. For example, concurrency of sexual partners is normative in African American communities (Andrasik et al., 2012; Frye et al., 2012) while it may not be so in others. It is critically important to deeply understand the culture of the target audience and ensure that educational interventions are relatable and appropriate (Massengale, Morrison, & Sudha, 2016; McCoy, Hlaing, Ergon-Rowe, Samuels, & Malow, 2009; McIntosh & Eschiti, 2009; Milaszewski, Greto, Klochkov, & Fuller-Thomson, 2012; Rios-Ellis et al., 2008). Implementing HIV prevention and education in specific communities will require “targeted approaches rather than a one-size-fits-all approach” to ensure their relevance and improve their potential impact for each community (De Jesus et al., 2016, p. 82).

Many studies described incorporating the approaches of community-based participatory research (CBPR) to partner with the communities of interest and to develop and evaluate the desired interventions (Alio et al., 2014; Andrasik et al., 2012; Berkley-Patton et al., 2013; Corbie-Smith et al., 2011; Jemmott, Jemmott, Lanier, Thompson, & Baker, 2017; Kenya, Okoro, Wallace, Carrasquillo, & Prado, 2015; Lightfoot et al., 2012; Williams, Palar, & Derosé, 2011; T. T. Williams et al., 2011). CBPR “invites community participation throughout the research process and has recently emerged as an important method to help investigators develop an understanding of cultural and social norms regarding disease prevention in underserved populations” (Kenya et al., 2015, p. 359). Studies reviewed indicated that CBPR was essential to: building trust (Alio et al., 2014); engaging diverse community members and being responsive to their concerns (Lightfoot et al., 2012); deepening engagement of all partners (Corbie-Smith et al., 2011); and designing appropriate interventions for the community of interest (Jemmott et al., 2017; M. V. Williams et al., 2011). Challenges with implementing CBPR may arise, however, especially in rural areas where communities are smaller and partners may have extensive knowledge of one another’s professional and personal histories, which can hinder building of trust (Corbie-Smith et al., 2011).

Research shows that many faith leaders are interested in learning more about HIV to better educate their members (Berkley-Patton et al., 2013). Furthermore, several studies described successful efforts to partner with faith-based organizations and faith leaders to provide HIV-related education and outreach (Alio et al., 2014; Berkley-Patton et al., 2013; Bryant-Davis et al., 2016; Lightfoot et al., 2012; M. V. Williams et al., 2011; T. T. Williams et al., 2011; Wooster et al., 2011). Partnerships with public health organizations were found to be integral for delivering HIV prevention interventions in faith-based organizations (Bryant-Davis et al., 2016; Wooster et al., 2011).

Several educational interventions improved knowledge or reduced risk-behaviors related to HIV in specific cultural communities. For example:

- A friendship-based education intervention decreased risky behaviors and increased HIV testing among young African American females (Dolcini, Harper, Boyer, & Pollack, 2010).
- A small-group, culturally appropriate intervention reduced high-risk sexual behaviors among black men who have sex with men and women (Harawa et al., 2013).
- A community-level HIV prevention intervention including media communication and peer-led outreach reduced risk behaviors among young men who have sex with men (MSM) who use alcohol or marijuana (Lauby et al., 2017).
- Coalition-based community mobilization efforts may enhance community awareness and lead to development of appropriate HIV prevention and care services for diverse youth populations (Miller et al., 2017).
- An HIV intervention including group sessions, social marketing, and community presentations was linked to reported increases in knowledge, decreases in risk behaviors, and increases in self-efficacy of condom negotiation with partners among Latino MSM (Vega, Spieldenner, DeLeon, Nieto, & Stroman, 2011).

Recommendations for future investigation

Because this is an especially broad tactic, an additional focused literature review should be conducted as specific types of education or outreach are considered for particular cultural communities.

Tactic 1d. Implement comprehensive HIV prevention and sex education in and beyond public schools.

Research staff reviewed 20 articles examining the impact of comprehensive sex education curriculum and other interventions on sexual health. The majority of studies reviewed focused on adolescents (middle and high school age youth) and were conducted in public schools in the U.S. One study focused on the experience of sex education instructors in implementing evidence-based sex education curriculum, and another focused on the role of nontraditional institutions in sex education (e.g., churches). The majority of studies measured outcomes related to sexual health knowledge and behaviors. Very few studies measured health outcomes (e.g., rate of HIV infection, unexpected pregnancy) as a result of participation in a particular sex education curriculum or intervention. Because the literature available on this topic is plentiful, the majority of studies reviewed had a rigorous study design (e.g., experimental or quasi-experimental design, meta-analysis of existing literature, or a systematic review). However, little has been done to identify and detail effective ways to implement a comprehensive HIV prevention and sex education policy or curriculum or to detail lessons learned from jurisdictions that have successfully done so.

Key takeaways

There is an abundance of research evidence that comprehensive sex education has a positive impact on healthy sexual behaviors among youth, particularly when compared to abstinence only or other curriculum (Chin et al., 2012; Jaramillo, Buhi, Elder, & Corliss, 2016; Kirby, 2008; Shepherd, Sly, & Girard, 2017). It should be noted that HIV/AIDS curricula have been shown to produce varying effects by gender and race/ethnicity. Further research is needed to understand these varying outcomes and the effectiveness of gender- and race/ethnicity-specific curriculum (Ma, Fisher, & Kuller, 2014).

To implement a comprehensive sex education curriculum, it is helpful and sometimes necessary to have a policy backing it. The positive impact of such policies on the sexual health behaviors of youth is evident from a study that assessed the impact of a policy enacted in Chicago public high schools on sexual health behaviors of youth (Ellington, 2016).

Some innovative education strategies are being used to increase knowledge and change attitudes toward and awareness of HIV. Some of these strategies have proven to be successful based on preliminary research and may be beneficial to explore further. These strategies include taking an ecological approach to sex education: an approach that incorporates design components at the individual, peer, family, and school levels, such as incorporating parents in health education classes, or using theater as a basis for an HIV-prevention intervention (Berglas et al., 2016; Grossman, Tracy, Charmaraman, Ceder, & Erkut, 2014; Lightfoot, Taboada, Taggart, Tran, & Burtaine, 2015). Another strategy includes a more expansive take on sex education, such as a rights-based curriculum, an emerging model for sexuality education that integrates discussions of sexuality, human rights, empowerment, and gender equality (Rohrbach et al., 2015). A recent systematic review found that sexuality education curricula that address topics of gender and power are associated with better sexual health outcomes. These topics may be important to consider as key characteristics of effective sexuality and HIV education programs (Haberland, 2015).

One study highlighted the need to explore creative ways to implement comprehensive sex education and STI/HIV prevention curriculum in communities where positive information about condoms and contraceptives is perceived as too controversial to include in school sex education, despite evidence of its positive impact on sexual risk behaviors (Realini, Buzi, Smith, & Martinez, 2010). Lessons learned from the implementation of a community-based comprehensive sexuality education program outside of the school system in a conservative environment may be helpful to consider if choosing to implement sex education strategies outside of public schools (Secor-Turner, Randall, Christensen, Jacobson, & Meléndez, 2017). Other community organizations, such as faith-based organizations, could play a key role in such community-based efforts; an exploratory study found that churches and faith leaders may be an underutilized but willing partner in comprehensive sexuality education efforts (Hach & Roberts-Dobie, 2016).

There are general recommendations for implementing comprehensive HIV prevention and sex education programs. A review of evaluations for curriculum-based sex and STD/HIV education programs identified 17 characteristics that make them effective, listed below (Kirby & Laris, 2009). Others in curriculum development and implementation have used these characteristics in their work (Realini et al., 2010).

The process of developing the curriculum:

1. Involved multiple people with different backgrounds in theory, research, and sex and STD/HIV education to develop the curriculum
2. Assessed relevant needs and assets of the target group
3. Used a logic model approach to develop the curriculum that specified the health goals, the behaviors affecting those health goals, the risk and protective factors affecting those behaviors, and the activities addressing those risk and protective factors
4. Designed activities consistent with community values and available resources (e.g., staff time, staff skills, facility space, supplies)
5. Pilot tested the program

The contents of the curriculum itself:

1. Focused on clear health goals, i.e., the prevention of STD/HIV and/or pregnancy
2. Focused narrowly on specific behaviors leading to these health goals (e.g., abstaining from sex or using condoms or other contraceptives, giving clear messages about these behaviors, and addressing situations that might lead to them and how to avoid such situations)
3. Addressed multiple sexual psychosocial risk and protective factors affecting sexual behavior (e.g., knowledge, perceived risks, values, attitudes, perceived norms, and self-efficacy)
4. Created a safe social environment for youth to participate
5. Included multiple activities to change each of the targeted risk and protective factors
6. Employed instructionally sound teaching methods that actively involved the participants, that helped participants personalize the information, and that were designed to change each group of risk and protective factors
7. Employed activities, instructional methods, and behavioral messages that were appropriate to the youths' culture, developmental age, and sexual experience
8. Covered topics in a logical sequence

The process of implementing the curriculum:

1. Secured at least minimal support from appropriate authorities such as departments of health or education, school districts, or community organizations
2. Selected educators with desired characteristics (whenever possible), trained them, and provided monitoring, supervision, and support
3. If needed, implemented activities to recruit and retain youth and to overcome barriers to their involvement (e.g., publicized the program, offered food, or obtained consent)
4. Implemented virtually all activities with reasonable fidelity

It is common for sex education curriculum to be adapted/modified in an effort to balance state and local requirements, maintain curriculum fidelity, and provide up-to-date and accessible information. Furthermore, it is possible for curricula that were developed for a particular group to be successfully used to achieve similar outcomes in other populations and contexts (Cronin, Heflin, & Price, 2014). However, research indicates a need for guidelines for adaptations that are acceptable, but still maintain fidelity to the original curriculum (Arons, Decker, Yarger, Malvin, & Brindis, 2017).

The review identified resources that can support implementation of a comprehensive sex education program. For example, the Working to Institutionalize Sex Education (WISE) Initiative is a privately funded effort that has worked with 88 school districts to reach their sex education institutionalization goals (Saul Butler, Sorace, & Hentz Beach, 2017); organizations implementing this tactic may want to consider the resources WISE Initiative could offer to school districts in Minnesota.

Recommendations for future investigation

The review identified resources for implementing evidence-based programs. Advocates for Youth has information about where to find evidence-based curricula, promising programs, and supplemental lesson plans for use in classroom and community settings (Advocates for Youth, n. d.; Goesling, Scott, & Cook, 2016). Many of the interventions have the potential to be scaled up or modified to benefit other populations, however more research is needed to identify the extent to which curricula and interventions are effective when transferred to other populations (Gruchow & Brown, 2009).

Goal 2:

Reduce HIV-related health disparities and promote health equity

Tactic 2a. Increase the organizational capacity of small, new, or yet-to-be-formalized culturally specific community-based organizations necessary to successfully apply for, secure, and implement state and federal HIV funding.

Research staff reviewed eight articles focused on increasing the capacity of and support for community-based organizations (CBOs) that have proven to be crucial to efforts to decrease HIV infection and to meet the needs of those who are living with HIV/AIDS. Articles ranged from identifying the greatest needs of community-based organizations to lessons learned from experience with capacity building assistance efforts.

Key takeaways

Overall, the existing literature supports working with CBOs to achieve optimal health outcomes related to HIV/AIDS in local communities, however, there is limited literature about building the capacity of CBOs. No studies specifically discussed the capacity building of small CBOs focused on cultural communities or support for small CBOs to work with state or federal funds.

Some key takeaways from the literature include:

- The research suggests developing participatory community budgeting processes that include community organizations in financial resource considerations, particularly in writing RFP grant narrative, budget development, and funding allocation (Grisham, Horn, & Farrow, 2017).
- Research supports the use of organizational empowerment, a theoretical framework that can be used to look at the internal structure and functions of an organization to engage in proactive behaviors necessary for community change. It is grounded in values of social justice, equity, and participation and has been used by academic institutions in an effort to help build the capacity of CBOs (Griffith et al., 2010).

- The research found that CBOs might need the greatest support in conducting evaluation of programs, services, and interventions in order to demonstrate their effectiveness (Collins & Diallo, 2010; Mayberry et al., 2008).
- The research suggests the establishment of long-term funding streams for capacity building through collaboration across CBOs may be beneficial (Crowley & Kates, 2013). A demonstration project in Florida aimed at encouraging CBOs to work together to eliminate disparities in HIV instead of requiring them to compete with each other for limited funds to serve their respective communities proved successful until the funding ended. In this case, CBOs worked together effectively to improve health conditions for young adults at increased risk for HIV transmission, but the collaboration was not sustained after federal funding ended (Darrow, Montanea, & Sánchez-Braña, 2010).
- Based on the literature reviewed, there may be a benefit to the use of community-based participatory research (CBPR) principles and lessons learned from community-academic-government partnerships as these learnings may apply to similar efforts related to capacity building within CBOs (Roberts et al., 2013).

Further investigation

The review did not identify research that specifically addressed capacity building within culturally specific CBOs or capacity building to support CBOs ability to access and implement state and federal funding. Further investigation to identify evidence or best practices related to such tactics may be valuable.

Tactic 2b. Increase meaningful inclusion of voices of disproportionately affected populations in decision-making about HIV programs and funding.

Research staff reviewed six articles that evaluated different ways of engaging communities who are disproportionately affected by HIV/AIDS in decision-making around funding and programming. Most of these studies explore effective ways to engage these populations in prevention efforts through interventions and community education strategies, but fewer discuss effective ways to engage these populations in the decisions to allocate resources and design programming aimed at ending HIV/AIDS. That said, lessons learned from efforts to engage community voices in education and prevention strategies may translate to efforts focused on decision-making about HIV programs and funding.

Key takeaways

General recommendations from the literature for increasing meaningful inclusion of voices disproportionately affected by HIV/AIDS in decision-making include:

- Use community mobilization principles in engagement efforts.

Community mobilization is...a structural intervention, in that it works to promote health by altering the structural contexts in which health is facilitated or obstructed. The overarching mechanism by which community mobilization works is through the empowerment of marginalized populations and, ultimately, engagement and galvanization to take action toward achieving common goals (Grisham et al., 2017, p. 6).

- Support policy-focused community-based participatory research (CBPR) efforts aimed at reducing HIV infections (Cacari-Stone, Wallerstein, Carcia, & Minkler,).

- Support the development and operation of coalitions of CBOs (Bauermeister et al., 2017; Eshel et al., 2008; Lin et al., 2012; Reed, Miller, & Francisco, 2014).
- Adhere to principles of cultural humility. These principles recognize that community input and expertise is as valuable as public health and/or empirical data (Bauermeister et al., 2017).
- Engage community members and organizations early to help build support (Bauermeister et al., 2017).
- Vary the size and scope of activities to engage community members and organizations (Bauermeister et al., 2017).
- Use a series of community dialogues rather than one-off events as a strategy to engage community members in decision-making processes (Bauermeister et al., 2017).

A report summarizing a three-year effort to explain the mechanisms of HIV community mobilization in several metropolitan areas provides extensive recommendations for state and local agencies (Grisham et al., 2017). Some recommendations on how to engage community members through community mobilization efforts to influence decision-making about HIV resource allocation and programming from this study are listed below:

- Encourage or incentivize organizations serving people living with, or vulnerable to, HIV infection to invest, or increase their investment, in community mobilization to promote greater community ownership and sustainable improvements.
- Community engagement and mobilization should be reaffirmed and revitalized through organization and program input mechanisms, such as community advisory boards.
- Public and private funders must recognize mobilization efforts as being central to a community-based HIV testing, care, treatment, and prevention engagement, uptake, and continuity. Funders must also recognize mobilization efforts in the development, implementation, and reinforcement of policies that address social and structural barriers to care, treatment, prevention, and support services.
- Develop participatory community budgeting, a democratic process in which community members directly decide how to spend part of a public budget. Including client and community members in financial resource considerations, particularly in RFP grant narrative and budget development and funding allocations, would allow for meaningful engagement, a sense of community ownership, and high-value contributions to community-mobilization resource-requirement determinations.
- Prioritize community mobilization at all stages of program conceptualization, development, and implementation (Grisham et al., 2017, p. 2-4).

Recommendations for future investigation

The literature offered little on coalition building. Additional exploration could look for resources on processes and factors that affect coalition formation, maintenance, institutionalization, actions, and outcomes that are commonly used to effectively implement structural interventions to inform this tactic (Bauermeister et al, 2017; Reed et al., 2014).

The review identified a funding stream from the CDC Community Approaches to Reducing Sexually Transmitted Diseases (CARS) initiative, which has been used in Michigan, to support coalition building and engagement strategies to determine resource allocation (Bauermeister et al., 2017). Organizations who work to implement this tactic may want to consider seeking this funding to support these efforts.

Goal 3:

Increase retention in care for people living with HIV

Tactic 3a. Enhance targeted wraparound supports for people at high risk of dropping out of care.

Research staff reviewed 27 articles related to this tactic, with most describing the results of analysis to identify risk factors for dropping out of care. A more limited number of articles evaluated an intervention that provided wraparound supports for individuals with the goal of improving retention in care. Articles that focused on primary linkage to care after diagnosis were excluded in order to focus on retention. It is important to note, however, that retention in care is not consistently defined across studies reviewed, and this has been noted as a problem in the literature. One study found that a sizable percentage of individuals who are not retained in care as measured by clinic visits were still receiving laboratory services, another outcome that is often used to represent retention in care (Byrd, Furtado, Bush, & Gardner, 2015).

Key takeaways

Several demographic characteristics have been linked to higher risk of dropping out of care or missing care appointments. These include:

- Younger age (Andel, Been, Rokx, & Ende, 2016; Byrd et al., 2015; Fleishman, Yehia, Moore, Korthuis, & Gebo, 2012; Muthulingam, Chin, Hsu, Scheer, & Schwarcz, 2013; Pence et al., 2018; Rana et al., 2015; Traeger, O’Cleirigh, Skeer, Mayer, & Safren, 2012)
- Non-white race including African-born (Andel et al., 2016), black (Fleishman et al., 2012; Traeger et al., 2012), and Hispanic (Traeger et al., 2012)
- Having young children (Andel et al., 2016)
- Uninsured (Blackstock, Blank, Fletcher, Verdecias, & Cunningham, 2015; Cunningham et al., 2014; Pence et al., 2018; Scheer et al., 2017; Yehia et al., 2015) or publicly insured (Tedaldi et al., 2014; Traeger et al., 2012)
- Low income (Crawford, 2015; Scheer et al., 2017; Traeger et al., 2012)
- Men who have sex with men (Farmer et al., 2016; Fleishman et al., 2012)

Co-occurring health issues have also been linked to a higher risk of dropping out of care. This was especially evident for mental health issues, which were linked to reduced retention in care (Cunningham et al., 2014; McLean, Gay, Metzger, & Foa, 2017; Pecoraro et al., 2013; Rooks-Peck et al., 2018; Scheer et al., 2017; Traeger et al., 2012; Yehia et al., 2015; Zuniga, Yoo-Jeong, Dai, Guo, & Waldrop-Valverde, 2015), while use of mental health services was related to improved retention (Rooks-Peck et al., 2018). However, a more limited number of studies identified the opposite relationship; individuals with comorbidities, diagnosis of mental illness, or hepatitis C infection were less likely to experience gaps in care (Byrd et al., 2015; Crawford, 2015).

Other health-related factors that are linked to reduced retention in care include:

- Recent diagnosis of HIV (Cunningham et al., 2014)
- Low CD4 counts (Cunningham et al., 2014; Tedaldi et al., 2014)
- Un-suppressed viral load (Cunningham et al., 2014; Pence et al., 2018)
- History of or current use of drug or alcohol abuse (Andel et al., 2016, Blackstock et al., 2015; Cunningham et al., 2014; Pecoraro et al., 2013; Pence et al., 2018; Scheer et al., 2017)
- Not being prescribed antiretroviral therapy (Agwu et al., 2015, Andel et al., 2016; Crawford, 2015; Cunningham et al., 2014; Farmer et al., 2016; Pence et al., 2018; Rana et al., 2015; Tedaldi et al., 2014)

Some behavioral factors that are correlated with poor retention in care include:

- Non-disclosure of serostatus (Elopre et al., 2015)
- Poor previous attendance at clinical HIV care appointments (Agwu et al., 2015; Farmer et al., 2016; Nijhawan et al., 2017; Pence et al., 2018; Rana et al., 2015)

A primary reason for non-attendance at clinical appointments is noted as failure to remember appointments (Andel et al., 2016). Patients desire appointment reminders, and contact from facilities may improve retention (Cunningham et al., 2014; Scheer et al., 2017; Yehia et al., 2015).

The literature identified one of the most important facilitators for maintaining engagement in HIV care is stable housing (Cunningham et al., 2014; Pecoraro et al., 2013; Scheer et al., 2017; Sprague & Simon, 2014). Incarceration is correlated with poorer retention in care (Pecoraro et al., 2013), and stable housing upon exit from prison was noted as especially important to this population (Bracken, Hilliard, McCuller, & Harawa; 2015).

Other barriers to retention noted in the literature include:

- Lack of affordable or reliable transportation (Konkle-Parker, Amico, & Henderson, 2011; Scheer et al., 2017; Sprague & Simon, 2014; Yehia et al., 2015)
- Denial of the HIV diagnosis (Konkle-Parker et al., 2011; Pecoraro et al., 2013)
- Feeling good or healthy (Konkle-Parker et al., 2011; Scheer et al., 2017)
- Stigma (Pecoraro et al., 2013; Yehia et al., 2015)

Research shows that individuals who face greater numbers of barriers have poorer retention in care (Wawrzyniak et al., 2015; Yehia et al., 2015).

Evaluations

Two studies offered evidence that provision of wraparound supports facilitated retention in care for HIV-positive individuals. One review of existing research found that outreach and ancillary support services such as appointment reminders, problem solving supports, access to case management, substance abuse linkage, and transportation improved the retention of African Americans in HIV treatment (Gaston, Gutierrez, & Nisanci, 2015). Another qualitative evaluation found that individuals recently released from prison benefited most from the non-medical support services they received in their navigation intervention (Fuller et al., 2018). Linkage to a diverse set of services was critical to their continued engagement in HIV care.

Recommendations for future investigation

Limited research was identified regarding the effectiveness of wraparound supports for improving retention in care. Further exploration of the literature to identify evaluations of this nature would be beneficial.

Goal 4:**Ensure stable housing for people living with HIV and those at high risk for HIV infection****Tactic 4a. Support the implementation of the Statewide HIV Housing Plan.**

Literature review was not completed for this tactic because it focuses on an administrative effort for which research evidence is not needed.

Goal 5:**Achieve a more coordinated statewide response to HIV****Tactic 5a. Develop a comprehensive inventory of all ongoing efforts being made to address HIV across Minnesota in order to: a) identify opportunities to collaborate and leverage services; and b) identify gaps in services.**

Literature review was not completed for this tactic because it focuses on an administrative effort for which research evidence is not needed.

Tactic 5b. Develop a regional telemedicine model to ensure minimum care provision for both prevention and care.

Research staff reviewed 15 articles that explore the use of telehealth to improve access to and quality of care for people living with HIV. For the purposes of this review, the focus was literature under the umbrella term of telehealth, which refers to a broader scope of remote health care services than telemedicine, which refers to the clinical application of technology only. Telehealth systems have often been used to facilitate expert consultation and education for health care providers, particularly for providers in remote areas with limited staff and expertise. However, the focus of this review is to identify the impact and feasibility of telehealth systems that connect

patients and providers. For this review, the focus was narrowed to literature that is specific to HIV/AIDS, although there is extensive literature available on the use of telemedicine and telehealth, more broadly, for other health care needs. Research staff considered a few additional studies that discuss the use of communication and information technologies more broadly, for targeted interventions and innovative strategies to improve ART adherence, etc. (Muessig, Nekkanti, Bauermeister, Bull, & Hightow-Weidman, 2015; Lima, Galvão, Alexandre, Lima, & Araújo, 2016; Daher et al., 2017).

Key takeaways

Research exploring the feasibility and effectiveness of telehealth systems or initiatives aimed at serving patients living with HIV is growing. There are few randomized controlled trials for telemedicine interventions targeting providers for HIV care-related outcomes; however, articles describing study protocols indicate future trials are planned (Todd, Mills, & Innes, 2017). Most studies show preliminary evidence that telehealth interventions and systems can produce patient outcomes equivalent to those receiving standard care (León et al., 2011; Saifu et al., 2012; Stekler et al., 2018). Additionally, telehealth technology can be an effective tool for managing caseloads, improving provider responsiveness to a patient's changing medical needs, and addressing the current nursing shortage (Lillibridge & Hanna, 2009).

Telehealth programs are largely accepted by patients due to increased convenience, reduced time spent traveling to appointments and waiting in waiting rooms, increased anonymity, and improved quality of communication (Saber, Yuan, John, Sheon, & Johnson, 2013; Saifu et al., 2012). Several studies focus on telemedicine systems used to meet the needs of disproportionately affected populations who experience barriers to accessing appropriate care for HIV/AIDS (Magnus et al., 2018). Many case studies of states that have successfully implemented effective telemedicine systems for people living with HIV/AIDS include common challenges and lessons learned (Jain et al., 2018; Leon et al., 2011; Lowery, Bronstein, Benton, & Fletcher, 2014).

Lastly, a model that was originally developed for hepatitis C care, the Extension for Community Health Outcomes (ECHO), which uses telemedicine to create regional communities of practice that link specialty clinics with primary care providers in outlying areas, has been considered as a model that could be adopted for HIV care. Attempts at the adoption of this model have shown mixed results (Moeckli et al., 2017; Scott et al., 2012; Wood et al., 2016). Further research is needed to understand how to use the ECHO model to deliver HIV care.

The literature highlighted some critical steps for developing a regional telemedicine model including:

- Conducting pre-implementation research (e.g., having conversations with patients who may utilize the service about their needs and concerns; Jain et al., 2018; Ohl et al., 2013).
- Defining clear roles, particularly if primary care and HIV specialists will be co-managing patients, determining care coordination processes, and determining how medical records will be shared (Ohl et al., 2013).
- Changing from paper to electronic medical records (Jain et al., 2018).
- Obtaining adequate broadband connection (Jain et al., 2018).
- Forming partnerships, establishing memorandums of understanding, and sensitizing partners to HIV/AIDS issues (Jain et al., 2018).
- Hiring and training staff, building buy-in, and developing training standards among all health professionals involved (Jain et al., 2018; Todd et al., 2017).

An evaluation of primary care clinics' adoption of HIV ECHO programs in the Veterans Health Administration found it might be difficult to disrupt traditional patterns of HIV care provision. In this instance, veterans living in rural areas were accustomed to traveling long distances to receive care from HIV specialty care clinics. Findings suggest that specialty providers were often reluctant to relinquish care and believed that people living with HIV preferred to stay with providers with whom they had already developed rapport. Similarly, primary care providers felt more comfortable with referring care to established specialist teams. In this case, researchers recommended a patient-level telemedicine system that can deliver specialty HIV care at a distance, as opposed to implementing a telemedicine system that shifts HIV patient care to a primary care provider (Moeckli et al., 2017). This is evidence that telemedicine programs should not be viewed as a "one size fits all." Certain models may work well in specific regions and with specific populations, but not others.

Recommendations for future investigation

Studies identified during this review offered mixed findings and further investigation could be beneficial. It would be valuable to conduct further review of the literature to:

- Explore current promising telemedicine models, such as Virtual Hospital and the ECHO model (León et al., 2011; Scott et al., 2012).
- Review findings from upcoming randomized control trials for a more robust understanding of the patient health outcomes associated with the use of telemedicine in HIV/AIDS-related care (Todd et al., 2017).
- Understand the experiences of other states and regions that have implemented a telemedicine or telehealth system to address the needs of specific populations (Jain et al., 2018; Lowery et al., 2014).

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