STRUCTURAL INTERVENTIONS (SI) REVIEW METHODS

The Prevention Research Synthesis (PRS) Project review for identifying **Structural Interventions (SI)** is conducted using well-established systematic procedures for searching and reviewing the intervention research literature. The information presented below describes the search strategy for identifying relevant articles, study eligibility criteria for inclusion in the review, and study coding procedures for reviewing the quality of the evidence. A detailed overview of the PRS search strategy is available in the article *Developing a comprehensive search strategy for evidence based systematic reviews* in the open access journal *Evidence Based Library and Information Practice*.

SI Search Strategy

The PRS Project's cumulative database of the HIV, AIDS and STD prevention research literature is used to identify relevant articles. This cumulative database is continually updated annually with automated searches designed and tailored to five research areas: (1) HIV, AIDS, or STD behavioral prevention; (2) linkage to, retention in, engagement in, and re-engagement in HIV care; (3) HIV, AIDS, antiretroviral therapy (ART) treatment and adherence; (4) systematic reviews on HIV and AIDS; and (5) HIV, AIDS, or STD and Pre-Exposure Prophylaxis (PrEP). The automated searches use the following electronic bibliographic databases to retrieve relevant published literature: CAB Global Health, CINAHL, EMBASE, MEDLINE, PsycINFO, and Sociological Abstracts. The search has been developed and modified each year by skilled librarians.

In addition to the automated search, there is a supplemental manual search, which includes a quarterly hand search of 27 journals, requesting publications from experts in the field and reviewing other sources, such as electronic mail lists, clinical trial databases (e.g., Cochrane Library, CRISP database), conference proceedings, and references harvested from relevant HIV behavioral prevention research literature.

For each eligible intervention study, the PRS cumulative database is searched from the existing searches for the Risk Reduction (RR), Medication Adherence (MA), Linkage to, Retention in, and Re-engagement in HIV Care (LRC), and PrEP reviews to identify all articles reporting descriptive or outcome data from the same intervention. All articles describing the same intervention study are considered linked reports and are included in the review process for that study. Additional details about these search strategies and procedures can be obtained by contacting the PRS project.

SI Study Eligibility

Once articles are identified through the PRS cumulative database, they are screened to determine eligibility for the PRS SI review. To be included in this review, studies ***must meet each*** of the following inclusion criteria:

- Published or accepted for publication in a peer-reviewed journal

- Conducted in the U.S. or a U.S. territory and has a comparison arm or if one-group study design, has pre-post intervention data
- Focus on an HIV, AIDS, or STD prevention intervention with a structural component (i.e., access, capacity-building, community mobilization, mass media, physical structure, policy/procedure, social determinants of health)
- Outcome evaluation report with either a comparison arm or pre-post intervention data for one-group study designs
- Report any of the following relevant outcome data:
    - Behaviors directly impacting HIV risk
        - Sex risk behaviors (e.g., abstinence, mutual monogamy, number of sex partners, consistent condom use with anal/vaginal sex, condomless anal/vaginal sex, proportion of anal/vaginal sex acts protected, refusal to have unsafe sex)
        - Drug injection behaviors (e.g., frequency of injection drug use, needle sharing)
        - Pre-exposure prophylaxis (PrEP) behavioral or biological outcome data (i.e., screening for PrEP eligibility and referring to PrEP services, linkage to PrEP care, PrEP initiation/uptake, PrEP use, PrEP medication adherence or persistence, PrEP drug levels, retention in PrEP care, HIV incidence, PrEP prescribing behavior, PrEP utilization among healthcare systems and communities)
        - HIV-related stigma
        - HIV testing (e.g., utilization of HIV C&T services, repeat testing)
            - Note: HIV testing is a relevant outcome only if the study reports new HIV infections
        - Antiretroviral treatment (ART) adherence outcome measures that may include electronic data monitoring (e.g., MEMs caps), pill count, pharmacy refill, or self-reported adherence
        - ART prescriptions (as outcomes of provider interventions only)
        - Biologic measures indicating HIV or STD (e.g., prevalence or incidence measures of hepatitis, HIV, or other STDs)
            - Note: Biologic measures of STD infections are relevant outcomes only as a proxy for HIV behavior
        - HIV morbidity or AIDS mortality (includes biologic measures of HIV viral suppression)
        - Relevant LRC outcome data (i.e., linkage to HIV care, retention in HIV care, engagement in HIV care, re-engagement in HIV care, HIV viral suppression)

Interventions ***not*** currently included in the review:

- Interventions that do not have pre-intervention data for one-group study designs
- Interventions comparing biomedical treatment efficacy or adherence outcomes of different medication treatment regimens
- School-based curricula

SI Study Coding Procedures

A single trained coder screens each study at abstract level to determine eligibility based on SI outcome relevance and measurement. Pairs of coders then independently evaluate each study at full report using the appropriate set of criteria. This coding includes all linked articles reporting information on the same intervention study. All discrepancies between coder pairs are reconciled through discussion. Quality assurance is conducted annually to check the accuracy of all coding.

If the study does not report critical information needed to determine whether an intervention meets criteria for the SI Chapter, the PRS project contacts the principal investigator of the study to obtain the missing information or seek additional clarification. The final evaluation determination for each study is reached by team consensus.

SI Components

Structural Intervention Definition: An intervention that is, or included, a direct or explicit change external to the individual and not under their control (e.g., access to a product or service; capacity building; physical structure; mass media; community mobilization; organizational/institutional policy or procedure) in an underlying infrastructure that would make it easier to change risk and/or affects behavioral choices.

Access: Refers to provision of a health product or service or actions that make such products or services more readily available to the intended users. Access can be modified in ways that include, but are not limited to, physical changes. Examples include locating a storefront HIV testing site in a neighborhood or expanding its hours of operation. Condom distribution counts as access only if condoms are available widely and the intervention does not require enrollment into a program to procure.

Subcategories of Access include:

- HIV testing
- Condoms
- STI testing/treatment
- Sterile injection equipment
- HIV health care
- Substance abuse treatment

Capacity-building: Change that improves an agency's or large-scale system's ability to provide services or programs

Provider/supervisor training: Training of health care or other staff to help them use more effective procedures with patients/clients.

Technology: Using tools to increase productivity.

Hiring staff/funding: Adding personnel to start interventions or increase productivity or securing monies to implement or enhance interventions.

Staff incentives: Providing inducements, either monetary or non-monetary, to increase productivity.

Community Mobilization: A process of change involving multiple stakeholders within a community including people who live in the community. A key criterion is that the community becomes involved through interaction with each other, and the resulting change includes emergent properties, such as collective efficacy (e.g., sex workers that unite together to demand condom use from clients). A substantial amount of the change is generated by community members who play a role in developing and implementing the intervention.

Mass Media: An intervention that is widely disseminated via a large-scale communication medium other than person-to-person.

- **Social marketing:** The promotion of some positive social objective by employing marketing techniques used commercially; often disseminated via mass media (e.g., radio or TV spots delivering a crafted message). A requirement is that the information channel can be said *to saturate the environment*, so that exposure is largely outside the control of the individual (e.g., video shown to large waiting room; large posters displayed in multiple locations in a neighborhood). Small communication channels such as videos, letters, brochures, and newsletters delivered to individuals or small groups do not qualify as mass media.
- **Narrative interventions:** Interventions focused on a storyline included in the media (e.g., soap operas, podcast serial dramas)

Physical structure: Any physical form that affects risk directly or the ease with which healthy behaviors can be performed (e.g., creating new clinics, integrating services in one location, building a road, using a mobile van to deliver services).

- **Integration of services:** Services or products are brought together (i.e., co-located) for the sake of the convenience of the intended user and the efficiency of service provision.
- **New physical structures:** Development of structures that did not exist previously, at least in the present location (e.g., clinics, vans, doors on bathhouse rooms).
- **Services provided in non-traditional settings:** Health services made available to people in a particular setting (e.g., homes, workplaces, prisons, schools) that is not related to health or located in a health setting.

Policy/Procedure: Policy is formal guidance, principle or rule adopted to bring about change. Procedure is the implementation of a policy and typically specifies a process. It is important to note that virtually all interventions require some policy or procedural change in order to be instantiated. Both are decided at an organizational or higher level. Policy/procedure interventions are ones in which the change is the intervention itself.

- **Institutional policy/procedure:** Policies enacted by a non-judicial entity such as a clinic, school, or workplace that affect risk and/or behavioral choices (e.g., opt-out testing in an emergency department).
- **Governmental policy**: For interventions with this component, there may not be legal consequences for infractions, and they may be issued from a municipal, state, or national body (e.g., governmental policies to improve health insurance coverage).

Legislation: Involves change in law that affects risk and/or behavioral choices (e.g., syringe access laws). Such changes have the authority of the polity behind them.

Social Determinants of Health Interventions: Interventions addressing the conditions (e.g., social, economic, and physical) in which people are born, live, work, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

Survival: Interventions that address factors having to do with basic necessities such as money, food and shelter, rather than, or in addition to, addressing HIV-related risk behavior directly.

Acceptance and Respect: Interventions that address prejudice, discrimination, HIV stigma, or homophobia in the social environment of those whose health and/or health behaviors are affected by them. Interventions aimed at reducing internalized prejudice do not necessarily count as structural interventions because they may directly influence only the affected individuals.

The SI Components are mutually exclusive with the exception of the Access component, as interventions in other components provide access to things by their very nature and meet the definition of Access (e.g., condoms, HIV testing, or sterile syringes). Interventions can also be classified in more than one component if they have multiple strategies (e.g., community mobilization of sex workers with a 100% condom use policy).

PRS Manual Search Journal List* (n = 27)

AIDS
AIDS and Behavior
AIDS Care
AIDS Education and Prevention
AIDS Patient Care and STDs
American Journal of Public Health
BMC Infectious Diseases
BMJ Open
Clinical Infectious Diseases
Cochrane Database of Systematic Reviews
Current HIV/AIDS Reports
Current Opinion in HIV and AIDS
HIV Medicine
International Journal of STD & AIDS
JAIDS J of Acquired Immune Deficiency Syndromes
Journal of HIV/AIDS & Social Services
Journal of the Association of Nurses in AIDS Care
Journal of the International AIDS Society
Lancet HIV
Open Forum Infectious Diseases
PLoS Medicine
PLoS ONE
Public Health Reports
Sexual Health
Sexually Transmitted Diseases
Sexually Transmitted Infections
Systematic Reviews

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Additional details about the SI Chapter or the Prevention Research Synthesis (PRS) Project can be obtained by contacting PRS.