



## Evidence-based Practice Center Systematic Review Protocol

**Project Title:** *Achieving Health Equity in Preventive Services – Systematic Evidence Review*

### I. Background and Objectives for the Systematic Review

*Health equity* is defined by Healthy People 2020 as the “attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.”<sup>1</sup> The National Institutes of Health defines a *health disparity* as “a health difference that adversely affects disadvantaged populations based on one or more health outcomes.”<sup>2</sup> The main health outcomes are: (1) higher incidence or prevalence of disease including earlier onset or more aggressive progression, and premature or excessive mortality from specific conditions; (2) a population health measure of greater global burden of disease such as Disability Adjusted Life Years (DALY); and (3) worse outcomes on self-reported measures that reflect daily functioning or symptoms from specific conditions.<sup>2</sup>

Populations adversely affected by disparities as defined by the National Institute on Minority Health and Health Disparities include racial and ethnic minority populations (African Americans/Blacks, Hispanics/Latinos, American Indians/Alaska Natives, Asians, Native Hawaiians and Other Pacific Islanders), socioeconomically disadvantaged populations, underserved rural populations, sexual and gender minority populations, and/or others subject to discrimination.<sup>2</sup> These populations have poorer health outcomes attributed to being socially disadvantaged, which results in being underserved in the full spectrum of health care.<sup>2</sup> The existence of health disparities in the United States is well known including disparities in preventive health services.<sup>3</sup>

Overall, Americans use preventive services at approximately half the recommended rates.<sup>4</sup> Access and utilization of preventive health care differs across racial and ethnic groups,<sup>5,6</sup> among adolescents,<sup>7</sup> and for individuals with mental illness<sup>8</sup> or disabilities,<sup>9</sup> among others. Screening for cancer (cervical, breast, colon) and cardiovascular risk varies by poverty level and insurance status.<sup>10-12</sup> However, evidence to reduce health disparities is often not available to inform clinical practice recommendations. In this year’s report to Congress, the U.S. Preventive Services Task Force (USPSTF) identified evidence gaps that prevent it from making recommendations for specific racial/ethnic populations and age groups.<sup>13</sup> These gaps include screening for breast cancer in African American women, prostate cancer in African American men, and illicit drug use in children and adolescents.

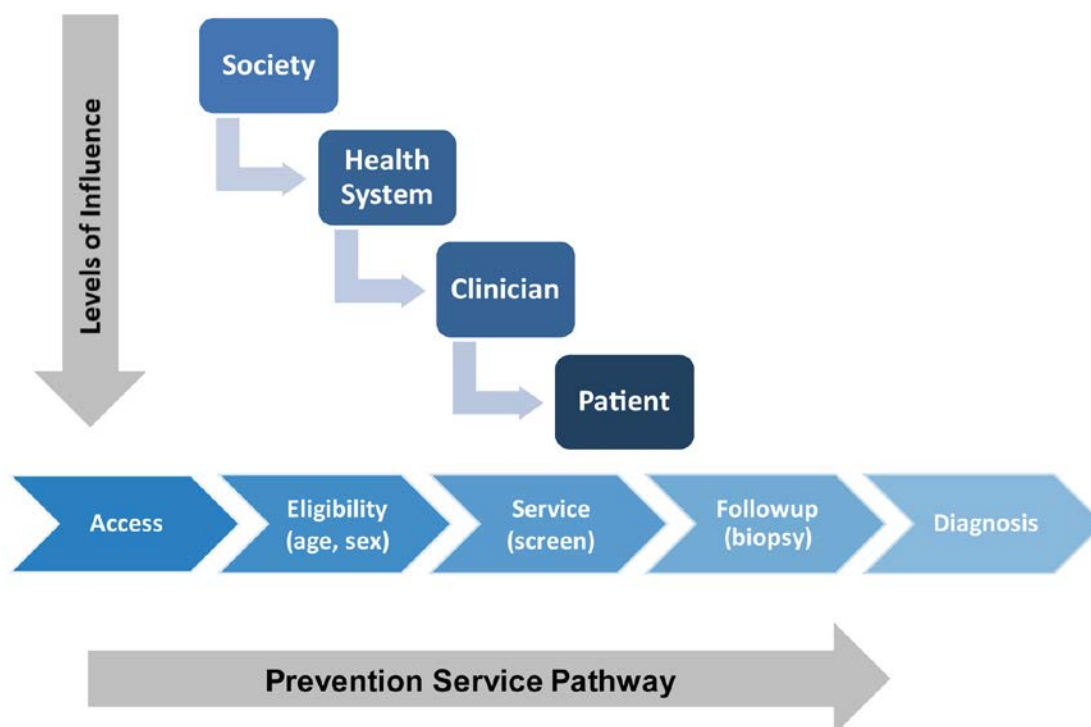
The purpose of this systematic evidence review (SER) is to summarize the state of the evidence on achieving health equity in preventive services by identifying the effects of impediments and barriers that can create disparities in prevention services, and the effectiveness of strategies and interventions to reduce health disparities in preventive services. This review will be a valuable resource for health researchers, policymakers, planners, and other stakeholders to inform future efforts to achieve health equity in prevention service delivery and related outcomes.

Achieving health equity in prevention is particularly challenging because: (1) nearly everyone in the population is eligible for prevention services, and, consequently, disparities can

occur across multiple sociodemographic dimensions as defined by Healthy People 2020;<sup>14</sup> and (2) the effectiveness of prevention relies on specific clinical pathways of services, which create multiple opportunities for disadvantaged groups to “fall through the cracks.” As a result, the scope and complexity of this topic is immense, and can be imagined as the large number of sociodemographic dimensions across which disparities might exist, multiplied by the number of preventive services considered.

The complexity of this issue is illustrated in an example of a clinical pathway for a prevention service in the conceptual diagram below (**Figure 1**). The first step involves gaining access to health care, encompassed by affordability (e.g., copays, deductibles, coinsurance payments), availability (e.g., enough providers in area, appointment availability), accessibility (e.g., geographic considerations, ease of travel to/from), accommodation (e.g., flexible work schedules, flexible clinic hours), and acceptability (e.g., racial/ethnic, gender considerations to foster patient-provider relationships).<sup>15,16</sup> After accessing health care, eligibility for the prevention service must be determined by identifying risk factors or other criteria (e.g., age, sex); followed by delivery of the prevention service (e.g., screening test, counseling intervention); followup of abnormal results (e.g., biopsy after mammography); and either diagnosis of the targeted health condition or resumption of routine screening at specified intervals. Each step in the pathway represents a potential gap or barrier that might give rise to a disparity resulting in less preventive care for disadvantaged groups. Different prevention services present variations of this pathway.

**Figure 1. Conceptual Diagram**



Successful navigation of the prevention service pathway is subject to multiple levels of influence, including those at societal, health system, clinician, and patient levels. Societal influences are particularly relevant to prevention services because accessibility is currently enhanced by provisions of the Affordable Care Act (ACA)<sup>17</sup> that mandate insurance coverage for

USPSTF A- and B-level recommendations, immunizations recommended by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices, and recommendations from the Health Resources and Services Administration's Bright Futures program and Women's Preventive Services Initiative. While major goals of the ACA, including expanded coverage, reduced costs, and improved health care quality and population health, are directed at reducing health disparities,<sup>3</sup> these goals may not be achieved for everyone and do not address all societal influences. Effective implementation of prevention services at the health system level is dependent upon additional influences that vary across health care organizations.<sup>18</sup> Finally, clinician and patient level influences introduce issues related to professional, group, and individual factors. Consideration of all these components will be a major challenge for the SER.

## **II. The Key Questions**

Key Question 1: What is the effect of impediments and barriers on the part of providers to the adoption, promotion and implementation of evidence-based preventive services that contribute to disparities in preventive services? Which of them are most common?

Key Question 2: What is the effect of impediments and barriers on the part of populations adversely affected by disparities to the adoption, promotion, and implementation of evidence-based preventive services that contribute to disparities in preventive services? Which of them are most common?

Key Question 3: What is the effectiveness of different approaches and strategies between providers and patients that connect and integrate evidence-based preventive practices for reducing disparities in preventive services?

Key Question 4: What is the effectiveness of health information technologies and digital enterprises to improve the adoption, implementation and dissemination of evidence-based preventive services in settings that serve populations adversely affected by disparities?

Key Question 5: What is the effectiveness of interventions that health care organizations and systems implement to reduce disparities in preventive services use?

### **Population(s):**

- *Include for all KQs:* Adults, asymptomatic for the screening or preventive service (target populations vary according to the preventive service as listed in **Table 1**)
- For KQ1: Health care providers including institutions (e.g., health care organizations or systems) and clinicians (e.g. primary care physicians, physician assistants, nurse practitioners)
- For KQ2: Populations adversely affected by disparities (racial and ethnic minority populations, socioeconomically disadvantaged populations, underserved rural populations, and sexual and gender minority populations)
- For KQ3: Providers serving populations and patients adversely affected by disparities
- For KQ4 and 5: Populations adversely affected by disparities (as defined above)
- *Exclude:* Symptomatic individuals; adolescents, children, pregnant women; populations not adversely affected by disparities; institutionalized individuals; studies specifically concerning individuals with disabilities

### **Interventions:**

- For KQs 3-5: 10 preventive services as defined in **Table 1**

- For KQ3: Approaches and strategies connecting providers and patients for reducing disparities in preventive services
- For KQ4: Health technologies and digital enterprises to improve adoption, implementation, and dissemination of preventive services
- For KQ5: Health care organization level interventions to reduce disparities in use of preventive services

### **Comparators:**

- *Include:* Screened versus unscreened populations; served versus not served populations; intervention versus no intervention or usual care; populations with barriers versus those without; populations adversely affected by disparities versus those unaffected
- *Exclude:* No comparisons

### **Outcomes:**

- *Include for all KQ's:*
  - Clinical outcomes: Differences in the incidence, morbidity, mortality, burden of disease, function and quality of life; other adverse health conditions that exist among specific population groups
  - Intermediate outcomes: Differences in measures of access to prevention services including rates of screening and followup procedures, utilization of services, behavior change, and improvement in intermediate health outcomes
  - Adverse effects or harms of interventions (see **Table 1** and **Appendix A**)
- For KQ1: Effects of impediments and barriers to the adoption, promotion, implementation of evidence-based preventive services on the part of providers
- For KQ2: Effects of impediments and barriers to the adoption, promotion, and implementation of evidence-based preventive services related to disadvantaged patient groups
- For KQ3: Differences in measures of the effectiveness of approaches and strategies to connect and integrate evidence-based preventive practices between providers and patients in reducing disparities in use of preventive services
- For KQ4: Differences in measures of the effectiveness of information technologies and digital enterprises to improve the adoption, implementation, and dissemination of preventive services
- For KQ5: Differences in measures of the effectiveness of health system level interventions to reduce disparities in preventive service use; differences in measures of disparities in preventive services use related to health system level interventions
- *Exclude:* Outcomes not relevant to the key questions

### **Timing:**

- Any duration of followup

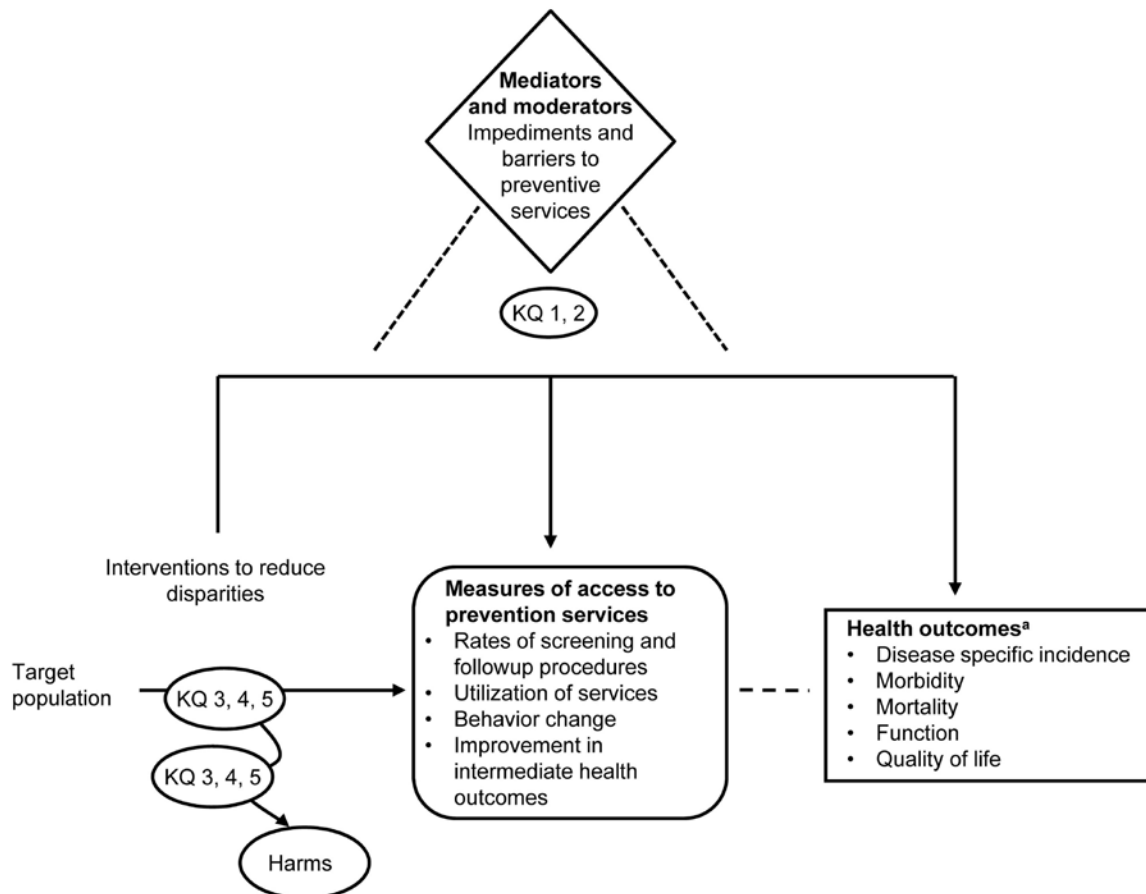
### **Settings:**

- *Include:* Settings applicable to primary care related clinical settings including primary care outpatient clinics, community health clinics, and settings referable from primary care settings in the United States or in countries with a “very high” United Nations Human Development Index<sup>19</sup> that are relevant to care in the United States
- *Exclude:* Settings not relevant to primary care settings in the United States

### III. Analytic Framework

Below is the analytic framework for this review, representing the relationships of the key questions and the target population, interventions, and outcomes (**Figure 2**).

**Figure 2. Analytic Framework**



<sup>a</sup>Outcomes vary by preventive service and are specified in **Table 1**

**Table 1. Preventive Services**

Preventive Service	Population	Outcomes Related to Access & Services	Health Outcomes
Abnormal blood glucose and type 2 diabetes screening	Adults age 40 to 70 years who are overweight or obese	Rates of screening; development of type 2 diabetes; late stage diagnosis; health care utilization related to diabetes	Disease specific mortality, morbidity, quality-of-life, harms of screening
Aspirin use to prevent cardiovascular disease (CVD) and colorectal cancer (CRC): preventive medication	Adults age 50 to 59 years with >10% 10-year CVD risk	Use of low-dose aspirin for prevention purposes	CVD events (MI, CVD); CRC incidence; disease specific mortality, morbidity, quality-of-life, harms of low dose aspirin

<b>Preventive Service</b>	<b>Population</b>	<b>Outcomes Related to Access &amp; Services</b>	<b>Health Outcomes</b>
Breast cancer screening	Women age ≥40 years	Rates of screening mammography, followup imaging, and biopsies	Breast cancer incidence, advanced breast cancer, breast cancer mortality, and all-cause mortality, quality-of-life, harms of screening
Cervical cancer screening	Women age 21 to 65 years	Rates of screening, followup procedures, biopsies, and colposcopy	Early detection of disease (CIN3+); invasive cancer incidence; disease specific mortality, morbidity, quality-of-life, harms of screening
Colorectal cancer screening	Adults age 50 to 75 years	Rates of screening based on screening modality, followup procedures, and biopsies	Colorectal cancer incidence; advanced colorectal cancer; cancer-specific mortality, morbidity, quality of life, harms of screening
Healthful diet and physical activity for CVD prevention in adults with cardiovascular risk factors: behavioral counseling	Adults with obesity and CVD risk factors	Utilization of counseling services; changes in diet and physical activity	Cardiovascular specific mortality, morbidity, quality of life, harms of counseling
High blood pressure screening	Adults age 18 and older	Rates of screening; measurable changes in blood pressure	Hypertension related mortality; CVD; CHD; stroke; heart failure; end stage kidney disease, harms of screening
Lung cancer screening	Adults age 55 to 80 with a smoking history	Rates of screening, followup procedures, and biopsies; smoking cessation	Cancer specific mortality, morbidity, and quality of life, harms of screening
Obesity in adults: screening and management	All adults (screening); adults who are overweight or obese (management)	Rates of screening and utilization of management services	Disease specific morbidity, mortality, function, and quality of life, harms of screening and management
Tobacco smoking cessation in adults: behavioral and pharmacotherapy interventions	Adults	Rates of utilization of management services; smoking cessation; changes in tobacco smoking	Disease specific morbidity; mortality; perinatal morbidity/mortality; and quality of life, harms of interventions

Abbreviations: CHD=coronary heart disease; CRC=colorectal cancer; CVD=cardiovascular disease; MI=myocardial infarction

## IV. Methods

### A. Criteria for Inclusion/Exclusion of Studies in the Review

Eligibility criteria are used to identify studies that address the KQs and are defined by populations, interventions, comparators, outcomes, timing, and setting as detailed in **Table 2** and described above. Populations adversely affected by disparities are those defined by the National Institute on Minority Health and Health Disparities described previously.<sup>2</sup> For some aspects of this review (impediments, barriers, approaches, strategies, outcomes), criteria are intentionally broad in order to capture research that may be unanticipated at the beginning of the project. Criteria are more restrictive for other aspects of the review in order to manage its scope. For example, studies specifically concerning individuals with disabilities will be excluded because the many types of disabilities to consider would greatly expand the systematic review. However, studies of the general population that also enroll individuals with disabilities will be included if studies otherwise meet eligibility criteria.

**Table 2. Eligibility Criteria**

PICOTS	Include	Exclude
<b>Populations</b>	Adults, asymptomatic for the screening or preventive service (target populations vary according to the preventive service – see <b>Table 1</b> ) KQ1: Health care providers including institutions (e.g., health care organizations or systems) and clinicians (e.g. primary care physicians, physician assistants, nurse practitioners) serving patients adversely affected by disparities KQ2-5: Populations adversely affected by disparities <sup>a</sup> KQ3: Providers serving populations adversely affected by disparities <sup>a</sup>	Symptomatic individuals; adolescents, children, pregnant women; populations not adversely affected by disparities; institutionalized individuals; studies specifically concerning individuals with disabilities
<b>Interventions</b>	KQs 3-5: 10 preventive services as defined in <b>Table 1</b> KQ3: Approaches and strategies connecting providers and patients for reducing disparities in preventive services KQ4: Health technologies and digital enterprises to improve adoption, implementation, and dissemination of preventive services KQ5: Health care organization level interventions to reduce disparities in preventive service use	Interventions not relevant to the key questions
<b>Comparisons</b>	Screened versus unscreened populations; served versus not served populations; intervention versus no intervention or usual care; populations with barriers versus those without; populations adversely affected by disparities versus those unaffected	No comparison
<b>Outcomes</b>	<u>For all KQs, Clinical Outcomes:</u> Differences in the incidence, morbidity, mortality, burden of disease, function and quality of life; other adverse health conditions that exist among specific population groups (see <b>Table 1</b> ) <u>For all KQs, Intermediate outcomes:</u> Differences in measures of access to prevention services including rates of screening and followup procedures, utilization of services, behavior change, and improvement in intermediate health outcomes For all KQs, Adverse effects or harms of services or interventions(see <b>Table 1</b> and <b>Appendix A</b> ) KQ1: Effects of impediments and barriers to the adoption, promotion, and implementation of evidence-based preventive services on the part of providers KQ2: Effects of impediments and barriers to the adoption, promotion, and implementation of evidence-based preventive services related to being part of disadvantaged patient groups	Outcomes not relevant to the key questions

<b>PICOTS</b>	<b>Include</b>	<b>Exclude</b>
	KQ3: Differences in measures of the effectiveness of approaches and strategies to connect and integrate evidence-based preventive practices between providers and patients in reducing disparities in use of preventive services KQ4: Differences in measures of the effectiveness of information technologies and digital enterprises to improve the adoption, implementation, and dissemination of preventive services KQ5: Differences in measures of the effectiveness of health system level interventions to reduce disparities in preventive service use; differences in measures of disparities in preventive services use related to health system level interventions	
<b>Timing</b>	Any duration of followup	None
<b>Clinical Setting</b>	Settings applicable to U.S. primary care settings, including primary care outpatient clinics, community health clinics, settings referable from primary care settings	All other settings, including community health case-finding
<b>Country Setting</b>	All KQs: Research conducted in the United States or in populations similar to U.S. populations with services and interventions applicable to U.S. practice (i.e., countries with a United Nations Human Development Index of “very high”)	All KQs: Research not relevant to primary care settings in the United States
<b>Study designs</b>	All KQs: Original research, including RCTs, nonrandomized controlled trials, prospective cohort studies with a concurrent comparison group; systematic reviews, nonsystematic reviews KQs1 and 2: “Pre-post” cohort studies without a comparison group (in addition to the study designs listed above)	Other designs including case reports, case series, studies with historical (rather than concurrent) comparison groups
<b>Language</b>	English language	Languages other than English

Abbreviations: KQ=Key Question; RCT=randomized controlled trial

<sup>a</sup>Populations adversely affected by disparities include racial and ethnic minority populations (African Americans/Blacks, Hispanics/Latinos, American Indians/Alaska Natives, Asians, Native Hawaiians and Other Pacific Islanders), socioeconomically disadvantaged populations, underserved rural populations, sexual and gender minority populations and/or others subject to discrimination who have poorer health outcomes often attributed to being socially disadvantaged, which results in being underserved in the full spectrum of health care.<sup>2</sup>

Ten preventive services have been identified for inclusion as part of this review:

1. Abnormal blood glucose and type 2 diabetes mellitus: screening
2. Aspirin use to prevent CVD and colorectal cancer: preventive medication
3. Breast cancer screening
4. Cervical cancer screening
5. Colorectal cancer screening
6. Healthful diet and physical activity for CVD prevention in adults with cardiovascular risk factors: behavioral counseling
7. High blood pressure in adults: screening
8. Lung cancer screening
9. Obesity in adults: screening and management
10. Tobacco smoking cessation in adults: behavioral and pharmacotherapy interventions

Populations and health outcomes may differ by service, as specified in **Table 1**.

## **B. Searching for the Evidence: Literature Search Strategies for Identification of Relevant Studies to Answer the Key Questions**

*Publication date range:* Studies published beginning in 1996. Depending on the original issue of the recommendation statement by the USPSTF, topic specific searches may be refined to reflect the relevant body of literature.

*Literature databases:* A research librarian developed a search strategy that will be reviewed by a second librarian using the Peer Review of Electronic Search Strategies (PRESS) tool. The search strategy for Ovid® MEDLINE®, PsycINFO®, and SocINDEX databases appears in **Appendix B**. Searches will also include the Veterans Affairs Health Services Research and Development (HSR&D) database. Searches will be updated following public posting of the review, and articles meeting inclusion criteria will be added. Finally, reference lists of included articles will be manually reviewed to identify other relevant studies that might not have been identified in database searches.

*Grey Literature:* Sources for grey (unpublished) literature will include reports produced by government agencies, health care provider organizations, or others. Technical Expert Panel (TEP) members will be asked to provide suggestions about unpublished literature.

*Contacting Authors:* Authors of studies will be contacted, when needed, if important information regarding methods or results is omitted from a publication, or unpublished data could be useful.

*Process for Selecting Studies:* Pre-established eligibility criteria described in **Table 2** will be used to determine inclusion and exclusion of abstracts in accordance with the Methods Guide for Effectiveness and Comparative Effectiveness Reviews.<sup>20</sup> Two team members will independently review abstracts, and full-text articles of all citations meeting initial screening criteria will be retrieved. Two team members will independently review articles for eligibility, and disagreements about inclusion will be resolved by discussion and consensus among investigators.

## **C. Data Abstraction and Data Management**

After studies are selected for inclusion, data will be abstracted into evidence tables including: study design, year, setting, country, sample size, eligibility criteria, population and clinical characteristics, with particular emphasis on the characteristics of specific populations adversely affected by disparities, details and characteristics about the intervention, and results relevant to each key question as described in **Table 2**. All study data will be verified for accuracy and completeness by a second team member, and evidence tables will be included as an appendix. A record of studies excluded at the full-text level including reasons for exclusion will be provided in an appendix.

## **D. Assessment of Methodological Risk of Bias of Individual Studies**

The risk of bias (quality or internal validity) of individual controlled trials, systematic reviews, and observational studies will be determined using predefined criteria developed by the USPSTF.<sup>21</sup> Systematic reviews will be assessed using the AMSTAR quality rating

instrument.<sup>22</sup> These criteria and methods will be used in conjunction with the approach recommended in the chapter, “Assessing the Risk of Bias of Individual Studies When Comparing Medical Interventions” in the AHRQ Methods Guide<sup>20</sup> and the chapter, “Options for Summarizing Medical Test Performance in the Absence of a Gold Standard.”<sup>23</sup> Studies will be rated as “good,” “fair,” or “poor,” or as specified by the quality assessment criteria.

Studies rated “good” have the least risk of bias, and their results will be considered valid. Good-quality studies include clear descriptions of the population, setting, interventions, and comparison groups; a valid method for allocation of patients to treatment; low dropout rates and clear reporting of dropouts; appropriate means for preventing bias; and appropriate measurement of outcomes.

Studies rated “fair” may be susceptible to some bias, though not enough to invalidate the results. These studies may not meet all the criteria for a rating of good quality, but no flaw is likely to cause major bias. The study may be missing information, making it difficult to assess limitations and potential problems. The fair-quality category is broad, and studies with this rating will vary in their strengths and weaknesses. The results of some fair-quality studies are likely to be valid, while others may be only possibly valid.

Studies rated “poor” will have significant flaws that imply biases of various types that may invalidate the results. They may have a serious or “fatal” flaw in design, analysis, or reporting; large amounts of missing information; discrepancies in reporting; or serious problems in the delivery of the intervention. The results of these studies will be least as likely to reflect flaws in the study design as the true difference between the compared interventions. We will not exclude studies rated as being poor in quality *a priori*, but poor-quality studies will not be used in synthesizing the evidence.

Each study evaluated will be dual-reviewed for quality by two team members and disagreements will be resolved by consensus.

## **E. Data Synthesis**

Evidence tables describing study characteristics, results, and quality ratings for included studies will be constructed, and summary tables will highlight main findings. Data synthesis will use a hierarchy-of-evidence approach, where the best evidence is considered most highly for each key question. Qualitative data will be summarized descriptively. Statistical meta-analyses will be conducted to quantitatively summarize study results and obtain more precise estimates for outcomes when appropriate. The feasibility of a quantitative synthesis will depend on the number and completeness of reported outcomes and lack of heterogeneity among the reported results. Meta-regression may be conducted to explore statistical heterogeneity.

## **F. Grading the Strength of Evidence for Major Comparisons and Outcomes**

The strength of evidence for each key question will be initially assessed by one researcher for each outcome by using the approach described in the AHRQ Methods Guide.<sup>20</sup> To ensure consistency and validity of the evaluation, the grades will be reviewed by the entire team of investigators for:

- Study limitations (low, medium, or high level of study limitations)
- Consistency (consistent, inconsistent, or unknown/not applicable)

- Directness (direct or indirect)
- Precision (precise or imprecise)
- Reporting bias (suspected or undetected)

The strength of evidence will be assigned an overall grade of high, moderate, low, or insufficient according to a four-level scale by evaluating and weighing the combined results of the above domains:

- **High:** Very confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has few or no deficiencies. The findings are stable, i.e., another study would not change the conclusions.
- **Moderate:** Moderately confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has some deficiencies. The findings are likely to be stable, but some doubt remains.
- **Low:** Limited confidence that the estimate of effect lies close to the true effect for this outcome. The body of evidence has major or numerous deficiencies (or both). Additional evidence is needed before concluding either that the findings are stable or that the estimate of effect is close to the true effect.
- **Insufficient:** No evidence, unable to estimate an effect, or have no confidence in the estimate of effect for this outcome. No evidence is available or the body of evidence has unacceptable deficiencies, precluding reaching a conclusion.

## G. Assessing Applicability

Applicability (external validity) will be estimated by examining the characteristics of the patient populations (e.g., demographic characteristics and characteristics of specific populations adversely affected by disparities; criteria used for diagnosis, presence of medical and psychiatric comorbidities); the sample size of the studies; and clinical settings where the intervention occurred (e.g., primary care, community setting) and levels of influence that may impact specific populations adversely affected by disparities (see **Figure 1**). Different populations will have different mediating and contributing factors, and interventions designed to reduce disparities may be targeted to the social, historical, and structural contexts of specific populations. Thus, interventions may be more or less effective in specific populations. Variability in the studies may limit the ability to generalize the results to other populations and settings.

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## **VI. Definition of Terms**

Not applicable.

## **VII. Summary of Protocol Amendments**

If needed, amendments to this protocol will include the date of each amendment, description of the change, and rationale.

## **VIII. Review of Key Questions**

Key questions were refined by the Evidence-based Practice Center (EPC), then reviewed by Agency for Healthcare Research and Quality (AHRQ) staff and the National Institutes of Health/Office of Disease Prevention (NIH/ODP) Working Group to ensure they addressed the clinical questions driving the nomination of this topic. These reviews also aimed to make the key questions more explicit about the populations, interventions, comparisons, outcomes, treatment duration, settings and study designs being considered.

## **IX. NIH/ODP Working Group**

In place of Key Informants, an NIH/ODP Working Group (including subject matter experts from the National Institute on Minority Health and Health Disparities, the National Heart, Lung, and Blood Institute, the National Cancer Institute, and the National Institute of Diabetes and Digestive and Kidney Diseases, and staff from the ODP) provided input into identifying the development and refinement of the protocol. The NIH/ODP Working Group has participated in monthly calls with AHRQ staff and the EPC; provided written and verbal feedback on drafts of the Topic Refinement documents; and participated with AHRQ staff, the EPC, and a Content Area Expert Group in a meeting to refine the project scope.

## **X. Technical Experts**

Technical Experts constitute a multi-disciplinary group of clinical, content, and methodological experts who provide input in defining populations, interventions, comparisons, or outcomes and identify particular studies or databases to search. For this project, Technical Experts were identified to provide broad expertise and a range of perspectives pertinent to health disparities in preventive services and interventions to reduce existing disparities. Divergent and conflicting opinions are common and perceived as healthy scientific discourse that results in a thoughtful, relevant systematic review. Therefore study questions, design, and methodological approaches do not necessarily represent the views of individual technical and content experts. Technical Experts provided information to AHRQ, the NIH/ODP Working Group, and the EPC on the important clinical and research issues about health disparities and efforts to achieve health equity among disparity groups. Technical experts will have the opportunity to review the draft report during the peer review and public review comment periods. Technical Experts will not participate in analysis of any kind nor will they contribute to the writing of the report.

Technical Experts must disclose any financial conflicts of interest greater than \$5,000 and any other relevant business or professional conflicts of interest. Because of their unique clinical or content expertise, individuals are invited to serve as Technical Experts and those who present with potential conflicts may be retained. The AHRQ TOO and the EPC work to balance, manage, or mitigate any potential conflicts of interest identified.

## **XI. Peer Reviewers**

Peer reviewers are invited to provide written comments on the draft report based on their clinical, content, or methodological expertise. The EPC considers all peer review comments on the draft report in preparation of the final report. Peer reviewers do not participate in writing or editing of the final report or other products. The final report does not necessarily represent the views of individual reviewers. The EPC will complete a disposition of all peer review comments. The disposition of comments will be published three months after the publication of the evidence report.

Potential Peer Reviewers must disclose any financial conflicts of interest greater than \$5,000 and any other relevant business or professional conflicts of interest. Invited Peer Reviewers may not have any financial conflict of interest greater than \$5,000. Peer reviewers who disclose potential business or professional conflicts of interest may submit comments on draft reports through the public comment mechanism.

## **XII. EPC Team Disclosures**

EPC core team members must disclose any financial conflicts of interest greater than \$1,000 and any other relevant business or professional conflicts of interest. Related financial conflicts of interest that cumulatively total greater than \$1,000 will usually disqualify EPC core team investigators.

## **XIII. Role of the Funder**

This project was funded under Contract No. HHSA290201500009I-HHSA29032013T from the Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services. The AHRQ Task Order Officer reviewed contract deliverables for adherence to contract requirements and quality. The authors of this report are responsible for its content. Statements in the report should not be construed as endorsement by the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

## **XIV. Registration**

This protocol will be registered in the international prospective register of systematic reviews (PROSPERO).

## Appendix A. United States Preventive Services Task Force publication dates and grades

Preventive Service	Initial Publication	Grade	Current Recommendation Date
Abnormal blood glucose and type 2 diabetes screening	2003	B	October 2015
Aspirin use to prevent cardiovascular disease (CVD) and colorectal cancer (CRC): preventive medication	CVD: 2007 CRC: 2009	B	April 2016
Breast cancer screening	2002	B: Ages 50-74 C: Ages 40-49	January 2016
Cervical cancer screening	2003	A	Current: 2012 Draft: In process
Colorectal cancer screening	2002	A	June 2016
Healthful diet/physical activity to prevent CVD in adults with CVD risk factors	2003	B	August 2014
High blood pressure screening	2007	A	October 2015
Lung cancer screening	2004	B	Current: 2013 Draft: In process
Obesity in adults: screening and management	2003	B	Current: 2012 Draft in process
Tobacco smoking cessation: interventions	2003	A	Current: 2015 Draft: In process

Abbreviations: CVD=cardiovascular disease, CRC=colorectal cancer

## Appendix B. Search strategies

### Database: Ovid MEDLINE(R) 1996 to July Week 3 2018

Broad search:

- 1 Healthcare Disparities/
- 2 "Health Services Needs and Demand"/
- 3 exp Health Services Accessibility/
- 4 exp Socioeconomic Factors/
- 5 Minority Groups/
- 6 exp Population Groups/
- 7 vulnerable populations/ or working poor/
- 8 exp Disabled Persons/
- 9 exp Sexual Minorities/
- 10 Minority Health/
- 11 cultural competency/ or cultural diversity/
- 12 1 or 2 or 3
- 13 or/4-11
- 14 13 and (equity or equitable or equal\* or fair or disparit\*).ti,ab,kw.
- 15 12 or 14
- 16 exp Preventive Health Services/
- 17 exp Mass Screening/
- 18 exp Health Promotion/
- 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.
- 20 or/16-19
- 21 exp diabetes mellitus, type 2/ or prediabetic state/
- 22 exp Cardiovascular Diseases/
- 23 Aspirin/
- 24 exp breast neoplasms/ or exp colorectal neoplasms/ or exp lung neoplasms/ or uterine cervical neoplasms/
- 25 exp Obesity/
- 26 Smoking/
- 27 exp "Tobacco Use Cessation"/
- 28 21 or (22 and 23) or 24 or 25 or 26
- 29 27 or 28
- 30 29 and pc.fs.
- 31 20 or 30
- 32 15 and 31
- 33 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new york city/ or san francisco/
- 34 ("united states" or "u.s." or alabama or alaska or arizona or arkansas or california or colorado or connecticut or delaware or florida or georgia or hawaii or idaho or illinois or indiana or iowa or kansas or kentucky or louisiana or maine or maryland or massachusetts or michigan or minnesota or mississippi or missouri or montana or nebraska or nevada or "new hampshire" or "new jersey" or "new mexico" or "new york" or "north carolina" or "north dakota" or ohio or oklahoma or oregon or pennsylvania or

"rhode island" or "south carolina" or "south dakota" or tennessee or texas or utah or vermont or virginia or washington or "west virginia" or wisconsin or wyoming).ti,ab,kw.

35 32 and (33 or 34)

36 africa/ or caribbean region/ or central america/ or canada/ or greenland/ or mexico/ or south america/ or exp asia/ or exp europe/

37 35 not 36

38 limit 37 to (meta analysis or systematic reviews)

39 (medline or systematic or metaanalysis or "meta analysis").ti,ab.

40 37 and 39

41 38 or 40

42 limit 41 to english language

43 37 not 42

Focused search: evidence gaps

1 Healthcare Disparities/

2 "Health Services Needs and Demand"/

3 exp Health Services Accessibility/

4 exp Socioeconomic Factors/

5 Minority Groups/

6 exp Population Groups/

7 vulnerable populations/ or working poor/

8 exp Disabled Persons/

9 exp Sexual Minorities/

10 Minority Health/

11 cultural competency/ or cultural diversity/

12 1 or 2 or 3

13 or/4-11

14 13 and (equity or equitable or equal\* or fair or disparit\*).ti,ab,kw.

15 12 or 14

16 exp Preventive Health Services/

17 exp Mass Screening/

18 exp Health Promotion/

19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.

20 or/16-19

21 exp diabetes mellitus, type 2/ or prediabetic state/

22 exp Cardiovascular Diseases/

23 Aspirin/

24 exp breast neoplasms/ or exp colorectal neoplasms/ or exp lung neoplasms/ or uterine cervical neoplasms/

25 exp Obesity/

26 Smoking/

27 exp "Tobacco Use Cessation"/

28 21 or (22 and 23) or 24 or 25 or 26

29 27 or 28

30 29 and pc.fs.

31 20 or 30  
 32 15 and 31  
 33 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new york city/ or san francisco/  
 34 ("united states" or "u.s." or alabama or alaska or arizona or arkansas or california or  
 colorado or connecticut or delaware or florida or georgia or hawaii or idaho or illinois or  
 indiana or iowa or kansas or kentucky or louisiana or maine or maryland or  
 massachusetts or michigan or minnesota or mississippi or missouri or montana or  
 nebraska or nevada or "new hampshire" or "new jersey" or "new mexico" or "new york"  
 or "north carolina" or "north dakota" or ohio or oklahoma or oregon or pennsylvania or  
 "rhode island" or "south carolina" or "south dakota" or tennessee or texas or utah or  
 vermont or virginia or washington or "west virginia" or wisconsin or wyoming).ti,ab,kw.  
 35 32 and (33 or 34)  
 36 "Social Determinants of Health"/  
 37 1 or 2 or 3 or 36  
 38 37 and (gap\* or limit\* or lack\* or barrier\*).ti,ab.  
 39 38 and (33 or 34)  
 40 39 and 20  
 41 40 and 28

Focused search: aspirin for colorectal cancer prevention

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21

23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 22 and 23  
 26 22 not 24  
 27 25 or 26  
 28 Aspirin/  
 29 (aspirin or "acetylsalicylic acid").ti,ab,kw.  
 30 exp Colorectal Neoplasms/pc [Prevention & Control]  
 31 ((colon or colorectal) adj3 cancer).ti,ab,kw.  
 32 31 and pc.fs.  
 33 28 or 29 or 30 or 32  
 34 27 and 33

Focused search: aspirin for cardiovascular disease prevention

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/

- 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp europe/ or exp islands/ or exp oceania/
- 25 22 and 23
- 26 22 not 24
- 27 25 or 26
- 28 Aspirin/
- 29 (aspirin or "acetylsalicylic acid").ti,ab,kw.
- 30 exp Cardiovascular Diseases/pc [Prevention & Control]
- 31 ("cardiovascular disease\*" or CVD or (coronary adj3 disease) or (heart adj3 disease) or (microvascular adj3 disease) or CHD or "myocardial infarction" or stroke).ti,ab,kw.
- 32 31 and pc.fs.
- 33 28 or 29 or 30 or 32
- 34 27 and 33

Focused search: breast cancer screening

- 1 Healthcare Disparities/
- 2 "Health Services Needs and Demand"/
- 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants of health"/
- 4 exp Socioeconomic Factors/
- 5 Minority Groups/
- 6 exp Population Groups/
- 7 vulnerable populations/ or working poor/
- 8 exp Disabled Persons/
- 9 exp Sexual Minorities/
- 10 Minority Health/
- 11 cultural competency/ or cultural diversity/
- 12 1 or 2 or 3
- 13 or/4-11
- 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or inequal\* or inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.
- 15 12 or 14
- 16 exp Preventive Health Services/
- 17 exp Mass Screening/
- 18 exp Health Promotion/
- 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.
- 20 prevent\*.ti,ab.
- 21 or/16-20
- 22 15 and 21
- 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/ (1250310)

24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 exp Breast Neoplasms/pc [Prevention & Control]  
 26 ((breast adj3 cancer) or mammogram or mammography or "clinical breast exam" or  
 (breast adj3 self)).ti,ab,kw.  
 27 exp Mass Screening/  
 28 screen\*.ti,ab,kw.  
 29 (25 or 26) and (27 or 28)  
 30 12 and 21 and 29  
 31 14 and 21 and 29  
 32 30 or 31  
 33 23 and 32  
 34 32 not 24  
 35 33 or 34

Focused search: cervical cancer screening

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/

- 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp europe/ or exp islands/ or exp oceania/
- 25 Uterine Cervical Neoplasms/
- 26 ((cervical or cervix) adj3 cancer).ti,ab,kw.
- 27 exp Mass Screening/ or exp early diagnosis/
- 28 screen\*.ti,ab,kw.
- 29 (25 or 26) and (27 or 28)
- 30 12 and 21 and 29
- 31 14 and 21 and 29
- 32 30 or 31
- 33 23 and 32
- 34 32 not 24
- 35 33 or 34

Focused search: colon cancer screening

- 1 Healthcare Disparities/
- 2 "Health Services Needs and Demand"/
- 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants of health"/
- 4 exp Socioeconomic Factors/
- 5 Minority Groups/
- 6 exp Population Groups/
- 7 vulnerable populations/ or working poor/
- 8 exp Disabled Persons/
- 9 exp Sexual Minorities/
- 10 Minority Health/
- 11 cultural competency/ or cultural diversity/
- 12 1 or 2 or 3
- 13 or/4-11
- 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or inequal\* or inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.
- 15 12 or 14
- 16 exp Preventive Health Services/
- 17 exp Mass Screening/
- 18 exp Health Promotion/
- 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.
- 20 prevent\*.ti,ab.
- 21 or/16-20
- 22 15 and 21
- 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/
- 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp europe/ or exp islands/ or exp oceania/

25 exp Colorectal Neoplasms/pc [Prevention & Control]  
 26 (((colon or colorectal) adj3 cancer) or colonoscopy).ti,ab,kw.  
 27 exp Mass Screening/  
 28 screen\*.ti,ab,kw.  
 29 (25 or 26) and (27 or 28)  
 30 12 and 21 and 29  
 31 14 and 21 and 29  
 32 30 or 31  
 33 23 and 32  
 34 32 not 24  
 35 33 or 34

Focused search: diabetes

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or inequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 diabetes mellitus, type 2/ or prediabetic state/  
 24 ("type 2 diabetes" or "diabetes mellitus" or prediabet\* or (glucose adj3 test\*) or  
 A1c).ti,ab,kw.  
 25 23 or 24  
 26 12 and 21 and 25  
 27 15 and 21 and 24  
 28 26 or 27

29 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 30 28 and 29  
 31 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 32 28 not 31  
 33 30 or 32

# Focused search: healthy diet

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or inequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 exp Diet/  
 26 exp Diet Therapy/  
 27 exp Exercise/  
 28 exp Exercise Therapy/  
 29 exp Physical Fitness/  
 30 exp Life Style/

31 (diet or exercise or "physical activity" or lifestyle or "life style").ti,ab,kw.  
 32 or/25-31  
 33 counseling/ or directive counseling/ or distance counseling/  
 34 exp health promotion/ or patient education as topic/  
 35 Health Education/  
 36 risk reduction behavior/  
 37 (counsel\* or advice or advise or recommend\*).ti,ab,kw.  
 38 or/33-37  
 39 22 and 32 and 38  
 40 39 and 23  
 41 39 not 24  
 42 40 or 41

Focused search: high blood pressure screening

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 exp Hypertension/pc [Prevention & Control]  
 26 (hypertension or "high blood pressure" or systolic or diastolic).ti,ab,kw.

27 Mass Screening/  
 28 early diagnosis/  
 29 (screen\* or test\* or diagnosis).ti,ab,kw.  
 30 25 or 2  
 31 or/27-30  
 32 22 and 30 and 31  
 33 32 and 23  
 34 32 not 24  
 35 33 or 34

Focused search: lung cancer

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants  
 of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or  
 inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task  
 Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or  
 los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or  
 greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or  
 exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 exp Lung Neoplasms/  
 26 (lung adj2 cancer).ti,ab,kw.  
 27 (((("small cell" or "non small cell") adj3 lung) and cancer\*).ti,ab,kw.  
 28 or/25-27  
 29 mass screening/ or mass chest x-ray/

30 exp early diagnosis/  
 31 (screen\* or test\* or diagnosis).ti,ab,kw.  
 32 or/29-31  
 33 28 and 32  
 34 33 and 22  
 35 34 and 23  
 36 34 not 24  
 37 35 or 36

Focused search: obesity

1 Healthcare Disparities/  
 2 "Health Services Needs and Demand"/  
 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants of health"/  
 4 exp Socioeconomic Factors/  
 5 Minority Groups/  
 6 exp Population Groups/  
 7 vulnerable populations/ or working poor/  
 8 exp Disabled Persons/  
 9 exp Sexual Minorities/  
 10 Minority Health/  
 11 cultural competency/ or cultural diversity/  
 12 1 or 2 or 3  
 13 or/4-11  
 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or inequal\* or inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.  
 15 12 or 14  
 16 exp Preventive Health Services/  
 17 exp Mass Screening/  
 18 exp Health Promotion/  
 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 20 prevent\*.ti,ab.  
 21 or/16-20  
 22 15 and 21  
 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/  
 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp europe/ or exp islands/ or exp oceania/  
 25 exp Obesity/  
 26 Overweight/  
 27 exp "Body Weights and Measures"/  
 28 (obese or obesity or overweight or "body mass" or bmi or weight).ti,ab,kw.  
 29 or/25-28  
 30 22 and 29

- 31 30 and 23
- 32 30 not 24
- 33 31 or 32

Focused search: smoking cessation

- 1 Healthcare Disparities/
- 2 "Health Services Needs and Demand"/
- 3 exp Health Services Accessibility/ or health status disparities/ or "social determinants of health"/
- 4 exp Socioeconomic Factors/
- 5 Minority Groups/
- 6 exp Population Groups/
- 7 vulnerable populations/ or working poor/
- 8 exp Disabled Persons/
- 9 exp Sexual Minorities/
- 10 Minority Health/
- 11 cultural competency/ or cultural diversity/
- 12 1 or 2 or 3
- 13 or/4-11
- 14 13 and (equity or equitable or equal\* or fair or parity or unequal\* or unequal\* or inequit\* or undertreat\* or under-treat\* or access\* or disparit\* or discriminat\*).ti,ab,kw.
- 15 12 or 14
- 16 exp Preventive Health Services/
- 17 exp Mass Screening/
- 18 exp Health Promotion/
- 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.
- 20 prevent\*.ti,ab.
- 21 or/16-20
- 22 15 and 21
- 23 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new orleans/ or new york city/ or philadelphia/ or san francisco/
- 24 exp africa/ or caribbean region/ or central america/ or latin america/ or canada/ or greenland/ or mexico/ or south america/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp europe/ or exp islands/ or exp oceania/
- 25 smoking cessation/ or smoking reduction/ or "tobacco use cessation"/
- 26 Smokers/
- 27 exp Smoking/
- 28 Tobacco/
- 29 (smoker\* or smoking or cigarette\$ or tobacco or nicotine).ti,ab,kw.
- 30 or/26-29
- 31 30 and (cessation or stop\* or cease\* or reduction).ti,ab,kw.
- 32 25 or 30
- 33 22 and 32
- 34 33 and 23
- 35 33 not 24

Systematic reviews:

- 1 Healthcare Disparities/
- 2 "Health Services Needs and Demand"/
- 3 exp Health Services Accessibility/
- 4 exp Socioeconomic Factors/
- 5 Minority Groups/
- 6 exp Population Groups/
- 7 vulnerable populations/ or working poor/
- 8 exp Disabled Persons/
- 9 exp Sexual Minorities/
- 10 Minority Health/
- 11 cultural competency/ or cultural diversity/
- 12 1 or 2 or 3
- 13 or/4-11
- 14 13 and (equity or equitable or equal\* or fair or disparit\*).ti,ab,kw.
- 15 12 or 14
- 16 exp Preventive Health Services/
- 17 exp Mass Screening/
- 18 exp Health Promotion/
- 19 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.
- 20 or/16-19
- 21 exp diabetes mellitus, type 2/ or prediabetic state/
- 22 exp Cardiovascular Diseases/
- 23 Aspirin/
- 24 exp breast neoplasms/ or exp colorectal neoplasms/ or exp lung neoplasms/ or uterine cervical neoplasms/
- 25 exp Obesity/
- 26 Smoking/
- 27 exp "Tobacco Use Cessation"/
- 28 21 or (22 and 23) or 24 or 25 or 26
- 29 27 or 28
- 30 29 and pc.fs.
- 31 20 or 30
- 32 15 and 31
- 33 exp united states/ or baltimore/ or boston/ or chicago/ or "district of columbia"/ or los angeles/ or new york city/ or san francisco/
- 34 ("united states" or "u.s." or alabama or alaska or arizona or arkansas or california or colorado or connecticut or delaware or florida or georgia or hawaii or idaho or illinois or indiana or iowa or kansas or kentucky or louisiana or maine or maryland or massachusetts or michigan or minnesota or mississippi or missouri or montana or nebraska or nevada or "new hampshire" or "new jersey" or "new mexico" or "new york" or "north carolina" or "north dakota" or ohio or oklahoma or oregon or pennsylvania or

"rhode island" or "south carolina" or "south dakota" or tennessee or texas or utah or vermont or virginia or washington or "west virginia" or wisconsin or wyoming).ti,ab,kw.  
 35 32 and (33 or 34)  
 36 africa/ or caribbean region/ or central america/ or canada/ or greenland/ or mexico/ or south america/ or exp asia/ or exp europe/  
 37 35 not 36  
 38 limit 37 to (meta analysis or systematic reviews)  
 39 (medline or systematic or metaanalysis or "meta analysis").ti,ab.  
 40 37 and 39  
 41 38 or 40  
 42 limit 41 to english language

**Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations July 26, 2018**

1 ((health or healthcare or "health care" or care) and (equit\* or disparit\* or inequal\* or accessibilit\*)).ti,ab,kw.  
 2 (socioeconomic or economic or poor or vulnerable or disenfranchis\* or (social adj3 class)).ti,ab,kw.  
 3 (divers\* or minorit\* or ethnicit\* or race or racial or black\* or "african american\*" or asian\* or "native american\*" or indian or hispanic or latin\*).ti,ab,kw.  
 4 (disabled or challenged or handicapped).ti,ab,kw.  
 5 ("sexual adj3 minorit\*" or homosexual\* or bisexual\* or gay\* or lesbian\* or transgender\* or queer or lbg\*).ti,ab,kw.  
 6 ("cultural competency" or "cultural diversity").ti,ab,kw.  
 7 (preventive or prevention or prevent).ti,ab,kw.  
 8 screen\*.ti,ab,kw.  
 9 ("United States Preventive Services Task Force" or "U.S. Preventive Services Task Force" or "U.S.P.S.T.F." or "USPSTF").ti,ab,kw,au.  
 10 or/2-6  
 11 10 and (equit\* or disparit\* or inequal\* or accessibilit\*).ti,ab,kw.  
 12 1 or 11  
 13 12 and (7 or 8 or 9)  
 14 (diabetes or glucose or aspirin or cardiovascular or heart or coronary or "myocardial infarction" or stroke or colorectal or colon or breast or cervical or diet or exercise or "physical activity" or overweight or obese or obesity or metabolic or hypertension or "blood pressure" or lung or tobacco or smoke\* or smoking).ti,ab,kw.  
 15 13 and 14  
 16 ("united states" or "u.s." or alabama or AL or alaska or AK or arizona or AZ or arkansas or AR or california or CA or Colorado or CO or Connecticut or CT or delaware or DE or florida or FL or georgia or GA or hawaii or HI or Idaho or ID or Illinois or IL or indiana or iowa or IA or Kansas or KS or kentucky or KY or Louisiana or LA).ti,ab,kw,in.  
 17 (maine or ME or maryland or MD or Massachusetts or MA or michigan or MI or Minnesota or MN or mississippi or MS or missouri or MO or montana or MT or nebraska or NE or Nevada or NV or "new hampshire" or NH or "new jersey" or NJ or "new

mexico" or NM or "new york" or NY or "north carolina" or NC or "north dakota" or ND).ti,ab,kw,in.

18 (ohio or OH or oklahoma or OK or oregon or pennsylvania or PA or "rhode island" or RI or "south carolina" or SC or "south dakota" or SD or tennessee or TN or texas or TX or Utah or UT or vermont or VT or Virginia or VA or Washington or WA or "west virginia" or WV or wisconsin or WI or Wyoming or WY).ti,ab,kw,in.

19 15 and (16 or 17 or 18)

20 limit 19 to english language

**Database: PsycINFO 1806 to July Week 4 2018**

1 health disparities/ or treatment barriers/

2 (equit\* or disparit\* or inequal\* or accessibilit\*).ti,ab.

3 exp sociocultural factors/

4 exp group differences/

5 minority groups/ or alaska natives/ or american indians/ or asians/ or blacks/ or cultural sensitivity/ or hawaii natives/ or indigenous populations/ or "latinos/latinas"/ or pacific islanders/ or "race and ethnic discrimination"/ or "racial and ethnic groups"/

6 exp disabilities/

7 exp gender identity/

8 exp sexual orientation/

9 (divers\* or minorit\* or ethnicit\* or race or racial or black\* or "african american\*" or asian\* or "native american\*" or indian or hispanic or latin\*).ti,ab.

10 ("sexual adj3 minorit\*" or homosexual\* or bisexual\* or gay\* or lesbian\* or transgender\* or queer or lbg\*).ti,ab.

11 (disabled or challenged or handicapped).ti,ab.

12 (1 or 2) and (or/3-11)

13 exp health promotion/

14 exp DIABETES/

15 exp cardiovascular disorders/

16 exp ASPIRIN/

17 exp breast neoplasms/

18 cancer screening/

19 exp overweight/

20 tobacco smoking/ or smoking cessation/

21 (diabetes or glucose or aspirin or cardiovascular or heart or coronary or "myocardial infarction" or stroke or colorectal or colon or breast or cervical or diet or exercise or "physical activity" or overweight or obese or obesity or metabolic or hypertension or "blood pressure" or lung or tobacco or smoke\* or smoking).ti,ab.

22 or/13-21

23 12 and 22

24 ("united states" or "u.s." or alabama or AL or alaska or AK or arizona or AZ or arkansas or AR or california or CA or Colorado or CO or Connecticut or CT or delaware or DE or florida or FL or georgia or GA or hawaii or HI or Idaho or ID or Illinois or IL or indiana or iowa or IA or Kansas or KS or kentucky or KY or Louisiana or LA).ti,ab,in.

25 (maine or ME or maryland or MD or Massachusetts or MA or michigan or MI or Minnesota or MN or mississippi or MS or missouri or MO or montana or MT or nebraska

or NE or Nevada or NV or "new hampshire" or NH or "new jersey" or NJ or "new mexico" or NM or "new york" or NY or "north carolina" or NC or "north dakota" or ND).ti,ab,in.

26 (ohio or OH or oklahoma or OK or oregon or pennsylvania or PA or "rhode island" or RI or "south carolina" or SC or "south dakota" or SD or tennessee or TN or texas or TX or Utah or UT or vermont or VT or Virginia or VA or Washington or WA or "west virginia" or WV or wisconsin or WI or Wyoming or WY).ti,ab,in.

27 23 and (24 or 25 or 26)

28 limit 27 to english language

29 limit 28 to yr="1996 -Current"

### **Database: SocINDEX July 26, 2018**

1 SU health disparities

2 SU socioeconomic factors

3 DE "RACE" OR DE "BLACK race" OR DE "CRIME & race" OR DE "DANCE & race" OR DE "ETHNOCENTRISM" OR DE "HEALTH & race" OR DE "MORTALITY & race" OR DE "MUSIC & race" OR DE "OCCUPATIONS & race" OR DE "PERSONAL beauty & race" OR DE "RACE & social status" OR DE "RACIAL classification" OR DE "RACIAL minorities" OR DE "RACIALIZATION"

4 DE "ETHNICITY" OR DE "CHEROKEE (North American people) -- Ethnic identity" OR OR DE "ETHNIC identity of African American women" OR DE "ETHNIC identity of Africans" OR DE "ETHNIC identity of Amerasians" OR DE "ETHNIC identity of Arab Americans" OR DE "ETHNIC identity of Arabs" OR DE "ETHNIC identity of Armenian Americans" OR DE "ETHNIC identity of Asian Americans" OR DE "ETHNIC identity of Creoles" OR DE "ETHNIC identity of Cuban Americans" OR DE "ETHNIC identity of Dominican Americans" OR DE "ETHNIC identity of East Indian Americans" OR DE "ETHNICITY in children" OR DE "ETHNICITY in women" OR DE "HAWAIIANS -- Ethnic identity" OR DE "HISPANIC Americans -- Ethnic identity" OR DE "INDIGENOUS peoples -- Ethnic identity" OR DE "INDIGENOUS peoples of the Americas -- Ethnic identity" OR DE "LATIN Americans -- Ethnic identity" OR DE "MAORI (New Zealand people) -- Ethnic identity" OR DE "MAYAS -- Ethnic identity" OR DE "MEXICANS -- Ethnic identity" OR DE "MULTIGROUP Ethnic Identity Measure" OR DE "NATIVE Americans -- Ethnic identity" OR DE "NAVAJO (North American people) -- Ethnic identity" OR DE "PACIFIC Islanders -- Ethnic identity" OR DE "POLISH Americans -- Ethnic identity" OR DE "PUERTO Ricans -- Ethnic identity" OR DE "RACIAL identity of blacks" OR DE "RACIAL identity of racially mixed people"

5 DE "SEXUAL orientation" OR DE "ASEXUALITY (Human sexuality)" OR DE "BISEXUALITY" OR DE "GYNEPHILIA" OR DE "HETEROSEXUALITY" OR DE "HOMOSEXUALITY" OR DE "LESBIANISM" OR DE "PANSEXUALITY (Sexual orientation)"

6 DE "GENDER identity" OR DE "ANDROGYNOUS identity" OR DE "FEMININE identity" OR DE "GENDER identity & clothing" OR DE "GENDER identity in education" OR DE "GENDER identity in mass media" OR DE "INTERSEXUAL identity" OR DE "MASCULINE identity" OR DE "SEXUAL

diversity" OR DE "TRANSGENDER identity" OR DE "TRANSGENDERISM" OR DE "TRANSSEXUALISM"

7 DE "LGBT people" OR DE "BEARS (Gay culture)" OR DE "CLOSETED LGBT people" OR DE "GAY people" OR DE "LESBIANS" OR DE "LGBT counselors" OR DE "LGBT fathers" OR DE "LGBT immigrants" OR DE "LGBT mothers" OR DE "LGBT people in the military" OR DE "LGBT people on television" OR DE "LGBT students" OR DE "LGBT teachers" OR DE "LGBT youth" OR DE "MASS media & LGBT people" OR DE "MINORITY LGBT people" OR DE "MUSLIM LGBT people" OR DE "RURAL LGBT people" OR DE "TRANSGENDER people" OR DE "WORKING class LGBT people"

8 AB prevent OR AB prevention OR AB preventive

9 S1 AND S8

10 S2 OR S3 OR S4 OR S5 OR S6 OR S7

11 S1 AND S10

12 S9 OR S11

13 S12 limiters - Date of Publication: 19960101-20181231