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STD Prevention Policies in the United States: Evidence and Opportunities

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Abstract

Policies are an important part of public health interventions, including in the area of STD prevention. Similar to other tools used in public health, policies are often evaluated to determine their usefulness. Therefore, we conducted a non-systematic review of policy evidence for sexually transmitted disease prevention. Our review considers assessments or evaluations of STD prevention-specific policies, health care system policies, and other, broader policies that have the potential to impact STD prevention through social determinants of health. We also describe potential policy opportunity in these areas. It should be noted that we found gaps in policy evidence for some areas; thus, additional research would be useful for public health policy interventions for STD prevention.

Short summary

Additional research that assesses or evaluates public health policy interventions for STD prevention would be useful.

IMPORTANCE OF POLICY IN PUBLIC HEALTH INCLUDING STD PREVENTION

Public health has long recognized the important role that policy –defined as laws, regulations, and other administrative actions or practices of governments and other institutions – can play in health.[1–3] In 1980, the Institute of Medicine (IOM) cited policy development as one of the three core public health functions for governmental agencies,[4] and policy interventions were reportedly a factor in each of the 10 major health achievements of the last century.[2] Structural interventions, including policies, may be of special interest to public health given that they have the potential to reach many individuals with less effort and cost than many other interventions.[4] The importance of policies in public health was further highlighted in a 2011 IOM report that focused on policy's role in

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improving health at a population-level and included several recommendations to governmental and public health agencies, including that “government agencies … familiarize themselves with the tool box of public health legal and policy interventions at their disposal.”[5] Another of the IOM’s recommendations focused on the assessment of evidence for existing and new policies and the identification of gaps in policies. Thus, it is important to assess and evaluate policies as they can serve as an intervention and can also serve in support of other interventions.

Although data has often been used to justify putting new policies into place (e.g., use of prevalence and cost-effectiveness data to recommend evidence-based policies), less research has focused on evidence related to existing policies for STD prevention in the United States. Such policies may serve as either barriers or facilitators to STD prevention. As with other STD prevention tools, policies may be evaluated to maximize impact. Thus, the purpose of this non-systematic review is to highlight selected research that has focused on 1) the assessment of STD-relevant policies and 2) the evaluation of the effectiveness of existing policies in STD prevention. Studies did not have to examine all aspects of effectiveness to be included. We used Medline/OVID, web searches (gray literature), and input from colleagues to compile research related to policy assessment and evaluation for STD prevention that was published from 1990-present. To narrow the scope of this review, research that focused solely on the need for a given policy was not included. We provide an overview of the policy evidence landscape for STD prevention. Additionally, we highlight potential policy opportunities that may be useful for future STD prevention efforts. Given the breadth of our topic and the challenges in conducting policy evaluations, we do not systematically assess the evidence for policies. Rather, we briefly highlight existing research.

Several policies where research has identified an association with STD prevention efforts or outcomes are included in this review. First, we describe research on policies specific to STD prevention, including policies related to expedited partner therapy (EPT) and to STD screening. We also describe where additional evidence to support these and other established or novel STD-specific policies would be useful. Next, we highlight recent policy changes in the healthcare system and highlight how research could identify potential impacts on STD prevention. Finally, we discuss broader policies impacting social determinants of STD risk, on issues such as economics, criminal justice, employment and housing.

POLICIES FOCUSED ON STD PREVENTION ISSUES

At a fundamental level, policies are the basis for STD prevention efforts at state and local public health departments. A 2013 compendium of state statutes that explicitly focus on STDs other than HIV[6] shows that these laws largely focus on the establishment of STD programs and/or clinics, mandatory testing and/or treatment, expedited partner therapy, and the confidentiality of STD-related records.[7] Additionally, an assessment of state disease intervention laws found that most jurisdictions have STD-related disease intervention laws.[8] However, little is known about the effectiveness of many of these policies in STD prevention. Thus, in its funding for STD programs in state health departments, the Centers for Disease Control and Prevention (CDC) has emphasized policy activities, including assessment and evaluation of policies.[9] In particular, an increased capacity to monitor and

evaluate relevant policies and to disseminate information about effective policies is anticipated to have an impact on long-term STD prevention outcomes.

Regarding assessment of STD policies, Myerson and colleagues (2003) conducted a survey to examine STD program involvement in state policy during 1995 and 2000 (refer to Table 1).[10] Three-quarters of programs reported involvement in policy activities and these activities increased from 1995 to 2000. Specifically, dissemination of STD information to policy makers, collaboration with coalitions, and testimony at state legislative hearings were policy behaviors that increased, and many activities reported in 1995 were continued in 2000. Below we highlight evidence from other assessments and evaluations of specific STD policies beginning with expedited partner therapy (EPT).

Expedited Partner Therapy (EPT)

EPT, a partner notification strategy that relies on the patient to deliver treatment to partners and has been shown to reduce gonorrhea reinfection in randomized controlled trials,[11–12] provides an example of the role that policy assessment and evaluation can play in hindering or advancing STD prevention efforts. Specifically, one frequently mentioned barrier to implementing EPT was provider concern regarding the legality of EPT (i.e., the uncertain legal status for EPT and whether providers may have legal liability if they provide treatment without a physical examination).[13–14] Thus, Hodge and colleagues[15] examined the policy environment for all states (including the District of Columbia and Puerto Rico) categorizing EPT in each jurisdiction as permissible, potentially allowable, or likely prohibited. Findings suggested that EPT was legally permissible in 12 areas, potentially allowable in 28, and likely prohibited in 13 at that time.

Awareness of the policy landscape for EPT, and efforts to change policies that may serve as barriers, may be related to the substantive changes that have occurred in EPT policies over time. As of August 2014, EPT was permissible in 35 jurisdictions, potentially allowable in 9, and likely prohibited in 6.[16] Furthermore, research has provided evidence showing an association between supportive EPT policies and increased use of EPT. For example, a multi-state study of the relationship between state-level EPT policies (e.g., laws and medical/pharmacy board statements) and gonorrhea patients receiving EPT found evidence that EPT use is higher in states with policies that are supportive to its use.[17] Additionally, an assessment of federally qualified health centers in New York City conducted in 2012 found that approximately half of governing organizations had written policies permitting EPT.[18] Of clinical sites examined, 80% provided EPT with slightly more use (86%) at sites whose governing organization had a written EPT policy.[18] Finally, a policy change that included EPT documentation in electronic medical records was associated with an increase in EPT from 20 to 48% for patients with chlamydia or gonorrhea.[19]

Although changes in EPT policies have been promising, some policy barriers remain. For example, a study of family planning providers indicated that reimbursement issues from health insurance plans remain a significant barrier to EPT.[20] This barrier remained even though another study found EPT to be cost-effective from a health systems perspective; for a given health insurance plan, EPT was less costly than standard partner referral when approximately one-third or more of partners were on the plan.[21]

STD Screening Policies

Multiple studies have sought to assess or evaluate STD screening policies, often with regard to specific topics or settings. Additionally, several studies focus on cost-effectiveness of screening in a given subpopulation to provide evidence in support of a policy. However, less research has assessed how often these policies exist in various healthcare delivery settings and at different levels including governmental and other institutions. For example, one study assessed prenatal screening laws for syphilis at the state-level;[22] such screening is recommended by the CDC and various medical groups.[22–23] The study found that the vast majority of jurisdictions (90%) had laws that required syphilis screening during pregnancy or at delivery. Additionally, findings suggested that states lacking these laws were not high morbidity areas, and the laws varied in the number and timing of screening required.[22] In another example, a 1997 assessment of STD testing policies in jail settings found that few facilities had policies to offer routine screening.[24] Rather, policies focused on testing detainees who had symptoms or who requested testing only.[24] However, facilities that reported following CDC guidelines were significantly more likely to have a policy to screen women for chlamydia.[24] Both studies suggest that awareness of STD rates or guidelines may be related to STD policies; however, the assessments were conducted over a decade ago and policies may have changed subsequently. Finally, although assessments of existing screening policies are important, they do not demonstrate whether these policies are effective.

Therefore, research has also evaluated STD screening policies to determine their impact and any remaining policy barriers. For example, HEDIS (Healthcare Effectiveness Data and Information Set) measures performance of health plans (private and public) on key aspects of healthcare including screening. One study evaluated the impact of a HEDIS performance measure focusing on chlamydia screening of sexually active young women as a new measure for health plans.[25] In one health plan, after introduction of the measure, screening of eligible women increased from 55% in 1998–99 to 72% in 2000–01 ($p<.001$).[25] In correctional settings, a few studies have evaluated screening policies. Two studies of jail screening policies provide some evidence of effectiveness for these policies. A study in San Francisco found that a higher jail testing density was associated with a decrease in chlamydia positivity in a clinic in that community; conversely, prevalence was stable at a clinic with a lower jail testing density in the community.[26] After screening policy was discontinued at a jail, another study found a decline in reported chlamydia and gonorrhea cases in a community.[27] The authors speculate that the reduction in screening may have led to undiagnosed cases.[27] Conversely, a separate study of a prison male screening policy in Philadelphia found that chlamydia positivity among 20–24 year old women declined in areas with high and low screening.[28] Thus, additional research is needed to fully evaluate the impact of screening policies on testing rates and on community prevalence.

Research evaluating changes in screening policies underscore the need for policy changes to be communicated and implemented effectively. Subsequent to national recommendations for chlamydia screening, various interventions have attempted to increase awareness of this policy. For example, chlamydia screening increased 14% among private providers in two counties of Michigan.[29] Similarly, screening rates also increased in three private providers

offices after tools and training were provided.[30] An evaluation of the HEDIS chlamydia measure among providers in Hawaii found that a lack of awareness of reimbursement for screening was a barrier to following the recommendation.[31] Finally, it is possible that some policy changes do not have an impact on screening. For instance, changes in insurance coverage for chlamydia screening in two states did not appear to impact screening rates [32]; and, syphilis screening among pregnant women has remained low even in an area of high incidence.[33] More research is needed to fully examine the impact of these policies on uptake of recommended screening services.

Other STD-specific Policy Opportunities

Finally, other aspects of STD prevention (e.g., beyond EPT and screening) appear to have less of an evidence base for various policies; however, we highlight areas where research has been conducted and where new policy opportunities may exist. For example, research conducted in the early 1980s examined mandated premarital syphilis testing policies found that such testing yielded few positive tests and state health officers favored their elimination.[34] Subsequent to such research, few of these laws remain. Thus, it is important to demonstrate a given policy's effectiveness as a population-based strategy to: 1) assess policies that may be unnecessary and 2) reduce future policies that are not useful. Conversely, policy efforts, particularly regarding public health collaboration with the private sector, may be useful for STD prevention. For instance, Los Angeles passed legislation requiring adult film companies to use condoms in their films. Subsequent to this policy change, one study analyzed condom use during adult films and found that condoms were used 80% of the time in same-sex anal sex but only 10% and 42% of the time for heterosexual anal and vaginal sex, respectively.[35] Similarly, state or local policies may be considered to support STD prevention in commercial venues, such as bathhouses and sex clubs, or risks associated with websites and apps that facilitate 'hooking up.' One study of cities with differing policies on bathhouses found that risky sexual behavior occurred at the same frequency but in different settings within the bathhouses (public vs. private) in the cities.[36] Policy approaches could potentially be used to align business and public health interests to create conditions in which people can be healthy, including on the internet. However, research is needed to assess current policies and to evaluate whether new or revised policies in these areas may aid STD prevention efforts.

POLICIES IN A CHANGING HEALTHCARE SYSTEM THAT MAY IMPACT STD PREVENTION

Affordable Care Act and Similar Health System Transformations

The Affordable Care Act (ACA) contains a number of provisions with significant implications for STD prevention, including increased access to health insurance and requirements for coverage of STD-related preventive services. ACA expands access to both public insurance (states that expand Medicaid eligibility to all nonelderly adults living below 133% of the federal poverty level only) and private health insurance (through subsidies and option of staying on parents' plan until age 26 years).[37–41] Additionally, all new individual and small groups plans, as well as all plans for people newly covered under the

Medicaid expansion, must cover ten categories of “Essential Health Benefits,” that include STD-relevant services such as ambulatory patient services; maternity and newborn care; prescription drugs; and preventive and wellness services.[38–39] In addition, all new private plans – individual, small group, and employer – as well as Medicaid “expansion” coverage, must cover without cost-sharing (i.e., co-pays) all Grade A and B preventive services recommended by the U.S. Preventive Services Task Force (USPSTF), the CDC’s Advisory Committee on Immunization Practices (ACIP), and, with regard to children and women, the Health Resources and Services Administration (refer to Table 2 for a list of services).[40] Pre-expansion Medicaid programs are not required to cover these services but ACA provides an incentive to cover the USPSTF and ACIP recommendations without cost-sharing.[41–42] The Affordable Care Act also promotes access to “Essential Community Providers” that serve primarily low-income, underserved populations, including STD clinics.[42] Thus, there are many potential routes for the ACA to intersect with STD prevention.

Although it is too early to evaluate the full effects of the ACA, some have tried to anticipate its impact on STD services, including a recent paper that highlights potential impacts on chlamydia screening.[43] Others have highlighted the continued need for safety net services for persons who remain uninsured or who seek STD services from safety net providers for reasons related to confidentiality and timeliness and quality of care.[44–45] Studies from Massachusetts, where some similar healthcare system reforms were implemented in 2006, may highlight the potential impact and remaining barriers to accessing sexual health services in a changing healthcare environment (refer to Table 3). An evaluation of the impact of Massachusetts reforms on adults aged 19–64 years found an increase in insurance coverage from 87% in 2006 to 94% in 2010.[46] Also during this time, reported access to and use of health care services increased by 5% for having a usual place for care and by 6% for having a preventive service visit.[46] Further, a Massachusetts study evaluated the effect of health reforms and the subsequent implementation of a $75 fee for STD visits following the elimination of public funding for STD services in 2009.[47] They found that STD patient visits decreased overall; however, service patterns differed with significant decreases at the STD clinic but increases in STD diagnoses during primary care visits.[47] It remains to be seen the extent to which the experience in Massachusetts will predict the impact of the ACA on a national level.

Third-party Billing

Higher rates of health insurance coverage, mandates for coverage of preventive services, and the opportunity to contract with more health plans may translate into incentives for STD clinics to develop or enhance third-party billing systems. Facing funding shortages, Kansas developed a coordinated approach to third-party billing using 6 regional billing groups.[48] Subsequent to the provision of training and technical assistance to the billing groups, reimbursements increased by 50–75% among local health departments.[48] An assessment of billing among STD clinics found that 30% of clinics were billing public insurance only and 45% were billing both public and private insurance.[49] Clinics reported numerous barriers to third party billing;[49] thus, a toolkit to aid in billing and reimbursement was developed.[50] Finally, a policy assessment examined several potential policy barriers to third-party billing in state statutes.[51] Although there are some potential policy barriers to

billing, there are several possibilities to lessen their impact. For example, eight states have statutes requiring health departments to provide free STD services;[51] however, health department attorneys in one of the eight states (Pennsylvania) determined that the statute did not prohibit billing insurance when available (e.g., patients' can be asked to voluntarily provide their health insurance information).[52]

Access to Confidential STD Services

Given increased expansion of health insurance and the accompanying health insurance plan communications with insured, an issue of heightened importance in the changing healthcare system is maintaining access to confidential STD services, particularly for adolescents and young adults. Access to confidential services among adolescents has long been identified as a significant issue.[53] Studies have shown that adolescents and young adults may avoid or delay seeking healthcare for sensitive services to ensure that their illness remains private (i.e., their regular doctor or parent won't know).[54] A significant percentage of insured women who attend family planning clinics did not want to use their insurance to minimize potential disclosure of their health information.[55–56] There are two legal issues related to accessing STD services: 1) laws that allow minors to consent for STD services and 2) laws that protect confidentiality of health insurance communications. Guttmacher[57] found that all states have laws allowing minors to consent for STD services; however, the age of consent varies and 18 states permit the provider to disclose the service to parents. Further, a review of state confidentiality laws and policies for insured dependents found that many states have laws requiring that certain health communications be sent to the insured (e.g., explanation of benefits).[58] These policies may have a specific impact on use of healthcare services among adolescents and young adults who are dependents on their parents' insurance plans, as ACA extends this coverage up to age 26 years. As safety net providers also often serve as providers of confidential services, it is important to consider how to best maintain these necessary services.[45]

BROADER POLICIES THAT MAY IMPACT STD PREVENTION

There are many other policies that do not directly focus on STD prevention but may indirectly impact it. These policies include but are not limited to policies related to other public health issues, social determinants of health (including policies in areas such as economics, education, housing, and criminal justice), comprehensive sex education, and health professionals' scope of work. Previous research has highlighted evaluations that provide some evidence for a few of these policies role in STD prevention. In a non-systematic review, Chesson examined various economic policies that have been associated with STD.[59] For example, research has suggested an association between welfare policies and STD in that higher welfare payments were associated with higher STD rates. Two studies have found that alcohol taxes had an inverse relationship with STDs, particularly for gonorrhea among men (e.g., higher taxes may lower gonorrhea rates).[59] Additionally, another study found that alcohol taxes and zero-tolerance laws were associated with decreased gonorrhea in young men; however, no evidence was found to support blood alcohol content or dry county laws.[60] Other alcohol policies have been associated with STD prevalence; alcohol availability has been associated with gonorrhea in two studies.[59]

However, like many policy evaluations, these studies were unable to demonstrate a causal relationship between the general policies and STD prevention.

Finally, legislators frequently propose laws that may affect upstream determinants of STDs, such as policies related to poverty, the criminal justice system, or education. For example, research has shown that incarceration is related to STD and may disrupt sexual networks and sex ratios in a community.[61–62] Additionally, issues such as housing policy changes that disperse residents from public housing complexes into different communities can impact STD prevention. One evaluation of a related policy in Atlanta found that STD prevalence and some sexual risk behaviors decreased after residents were moved away from public complexes.[63] However, like many policy evaluations, this study was unable to demonstrate a causal relationship between the general policies and STD prevention. Additionally, other research has described how a Health in All Policies approach (e.g., systematic consideration of health outcomes in all decision making processes)[64] can be used to address social determinants of health often associated with STD in relation to redevelopment policies.[65] Thus, it may be beneficial for STD programs to consider the potential impact of legislation on STD prevention in their jurisdiction. This focus can also have the added benefit of forging coalitions between different constituencies, and bringing a greater spotlight to STD related issues. Government employees often face restrictions preventing them from contacting policymakers with regard to specific legislation or actions. However, they can usually provide educational information to policymakers as well as to their partners.

CONCLUSION

We identified several STD-specific, healthcare system, and general policies that have been associated with STD prevention and public health in research. Depending on local epidemiology, many of the policies that we have highlighted may be of interest to STD programs in state and local health departments, as well as public health researchers and practitioners. Such policies could be included as one type of intervention to be considered for STD prevention efforts. Specifically, we found associations between policies and areas of STD prevention such as EPT and STD screening. However, in some instances, additional evidence to support these policies would be useful. Also, we highlight recent changes in the healthcare system and potential impacts on STD prevention. Finally, our review has also identified some gaps in research focusing on the effectiveness of some policies. There are numerous other policies including socioeconomic, criminal justice, and in other areas such as employment and housing, that may influence STD prevention efforts. Research is needed to evaluate their relationship with STD morbidity. Furthermore, it should be noted that laws and policies must be implemented and/or enforced to impact STD prevention. We identified some instances (e.g., EPT and prenatal syphilis screening policies) where efforts are needed to disseminate these policies in order to increase uptake.

There are difficulties in evaluating many public health strategies, and randomized controlled trials often are not feasible.[66] These difficulties are often heightened for policy evaluations as “linkages between … policy and actual health outcomes may be extraordinarily difficult to specify.”[66] Also, it can be especially difficult to evaluate policies given that the selection and measurement of outcomes, often at a community-level, can be challenging.

Garfinkel and colleagues[67] argue that the use of mapping can aid in the understanding of the roles that health research and policies may play for a given health outcome. Thus, our finding of limited evidence of a relationship between general policies and STD prevention in the context of policy evaluation was not unexpected. Rather, these findings highlight the difficulties in evaluating policies in "real-world" settings. In this context, multiple ecological or observational studies can and have been used to provide evidence in many fields.[68]

The gaps that we identified highlight the need for further research (including policy assessments and evaluations) into policies and STD prevention as policies have the potential to reach many individuals at a low cost. Like any other tool in the STD prevention toolbox, the use of policy interventions specifically for STD prevention must be evaluated so that STD programs and others can implement policies that work. For policies addressing the broader healthcare system or social determinants, STD programs must be aware of the opportunities and challenges created for STD prevention. The IOM has recommended a focus on policies to improve public health,[5] and others have argued that it is important for state and local health departments to improve policy assessment.[69] It is important to note that legal and policy barriers do not always require a legal/policy solution; policy interventions do not have to rely on legislation in order to be successful. Many of the same tools used in policy development – building constituencies, obtaining the support of key stakeholders, and developing common standards and guidelines – can be beneficial. Additionally, many healthcare institutions have policies that are easier to change than policies that require legislation and will still likely influence the health of their clients.

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HIGHLIGHTS

- Policies are an important part of public health, and have the potential to impact many individuals at a relatively low cost.
- Research on STD prevention-specific policies has largely focused on EPT and various screening policies.
- Recent healthcare system changes may intersect with STD screening policies and other STD prevention issues.
- Assessments and evaluations of policies are essential; more research is needed to evaluate the role of policies in STD prevention.

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Table 1

Policy assessments and evaluations: STD prevention-specific policies

Citation/Source	Type of Policy	Specific Focus	Population	Data Collection Methods	Significant Findings
PHLR & CDC (2014)[6,7]	Compendium of STD statutes	Assessment	State statutes	Legal research methods	• 6 common themes were identified in initial analyses.
Cramer et al (2014)[8]	Disease intervention activities	Assessment	State statutes	Legal research methods	• 76% of states have laws specifically addressing STD disease intervention activities. • 10% of states require notification of contacts.
Myerson et al (2003)[10]	STD program policy activities	Assessment	State STD programs	Survey; 74% response rate (RR)	• 76% programs reported 1+ policy behaviors with an increase from 1995 to 2000.
Hodge et al (2008)[15]	Expedited partner therapy (EPT)	Assessment	State policy environment	Legal research methods	• EPT was legally permissible in 12 areas, potentially allowable in 28, and likely prohibited in 13.
CDC (2014)[16]	EPT	Assessment	State policy environment	Legal research methods	• EPT was legally permissible in 35 areas, potentially allowable in 9, and likely prohibited in 6.
Cramer et al (2013)[17]	EPT	Evaluation: state-level policies & EPT use for gonorrhea	13 areas (SSuN Cycle II)	Legal research methods & community-level survey of gonorrhea patients	• EPT use was significantly higher where laws & policies supporting EPT existed (13.3%) than areas without laws but with supportive policies (5.4%), and areas without supportive laws and policies (1%).
Introcaso et al (2013)[18]	EPT	Assessment	FQHC in NYC	Survey of medical directors (76% RR) & clinicians (80% RR)	• 55% governing organizations have EPT policy • 80% sites provide EPT • 86% of governing organizations with EPT policy provide EPT
Mickiewicz et al (2012)[19]	EPT	Evaluation: documentation of EPT in electronic medical record	Urban STD/HIV clinic: gonorrhea & chlamydia patients	Medical records & sporadic chart review for confirmation	• EPT use increased from 20 to 48% for patients with chlamydia or gonorrhea
Gift et al (2011)[21]	EPT	Evaluation: cost-effectiveness of reimbursement	Seattle; New Orleans	Data from RCTs comparing EPT to standard patient referral (SR)	• EPT was cost-effective as compared to SR at a societal/health system level • EPT was cost-effective for a single payer if >= 29% of female partners (male patient) and >=32–

Citation/Source	Type of Policy	Specific Focus	Population	Data Collection Methods	Significant Findings
					27% of male partners (female patients) were on same insurance plan
Hollier et al (2003)[22]	Prenatal screening (syphilis)	Assessment	50 states, DC	Legal research methods; other data sources	• In 2001, 46 (90%) jurisdictions had law requiring syphilis screening during pregnancy (or at delivery). However, number and timing of tests varied. • No jurisdiction without a law was considered a high morbidity area.
Parece et al (1999)[24]	Jail screening	Assessment	Counties (≥200,000 pop) reporting > 40 P&S syphilis cases: 115 jails (82% housed men and women)	Email survey (97% response rate)	• Most facility policies focused on testing symptomatic or detainees who requested testing rather than routine screening policies. • Facilities who followed CDC guidelines often reported having a policy to screen women for chlamydia (p<.05).
Burnstein et al (2005)[25]	Chlamydia screening (HEDIS)	Evaluation: Kaiser Permanente Mid-Atlantic States	All female KPMAS members 15–26 years enrolled 11 months from 1/98–12/01	Electronic medical records	• All relevant departments had developed strategy for HEDIS measure. • Screening of eligible women increased (55% in 199–99 to 72% in 2000–01; p<.001).
Barry et al (2009)[26]	Jail screening	Evaluation: chlamydia prevalence (community)	Two communities with a jail and family planning clinic	Medical records	• Chlamydia positivity decreased in a clinic in a community that had high density jail testing. Positivity was stable in a clinic with low density jail testing in the community.
Broad et al (2009)[27]	Jail screening	Evaluation: reported chlamydia & gonorrhea cases	Cook county & Chicago	Case reports	• In Cook county, after jail screening discontinued, cases among men dropped by 90%. • Cases in Chicago only decreased by 9–12%.
Peterman et al (2009)[28]	Prison screening (similar to jails elsewhere)	Evaluation: chlamydia positivity among women pre/post policy	20–24 year old women attending family planning clinics in Philadelphia	Testing data from family planning clinics in areas with high prison screening & low prison screening	• Chlamydia positivity among 20–24 year old women declined during the study period; however, it declined in both high and low screening areas and had already been on the decline prior to the policy change.
National Chlamydia Coalition (NCC)-Michigan (2014)[29]	Chlamydia screening (HEDIS)	Evaluation: multifaceted intervention included policy component	Two counties in Michigan (Medicaid managed care providers)	Medical records	• Screening increased from 42.6% (2009) to 56.5% (2010)

Citation/Source	Type of Policy	Specific Focus	Population	Data Collection Methods	Significant Findings
NCC-New York (2014)[30]	Chlamydia screening (HEDIS)	Evaluation: multifaceted intervention included policy component	Three private providers (western NY)	Medical records	• Screening increased 8–13% across providers during project period.
McGrath et al (2011)[31]	Chlamydia screening (HEDIS)	Evaluation: provider & policy barriers	Pediatricians, ob/gyns, family practitioners in HI	Email/fax survey (21% response rate)	• Providers unaware of reimbursement for chlamydia screening were less likely to screen.
Owusu-Edusei & Gift (2010)[32]	Chlamydia screening	Evaluation: laws requiring insurance reimbursement	States with changes in laws compared to states without changes	MarketScan database (HEDIS measure) of privately insured patients	• Screening increased in all states regardless of new policies supporting reimbursement. More research is needed to determine impact of these policies.
Woods et al (2003)[36]	Bathhouse policies	Evaluation: policies relationship to sexual risk taking	Probability survey of MSM living in 4 cities	Telephone survey	• No differences in sexual risk behaviors were found except for whether unprotected anal intercourse occurred in public or private places.

Note. Abbreviations are as follows: PHLR (Public Health Law Research); CDC (Centers for Disease Control and Prevention); EPT (expedited partner therapy); RR (response rate); FQHC (Federally Qualified Health Center); NYC (New York City); RCT (Randomized Controlled Trial); SR (standard patient referral); P& S syphilis (primary and secondary syphilis); HEDIS (Healthcare Effectiveness Data and Information Set); KPMAS (Kaiser Permanente Mid-Atlantic States); NCC (National Chlamydia Coalition); NY (New York); HI (Hawaii); MSM (men who have sex with men).

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Table 2

STD services covered without cost sharing under ACA

STD Services Listed as USPSTF Recommended (Grade A and B) Services as of Sept 2014[1]
• Chlamydia screening: women – screen sexually active women age 24 years or younger and in older women who are at increased risk for infection • Gonorrhea screening: women -- screen sexually active women age 24 years or younger and in older women who are at increased risk for infection • Gonorrhea prophylactic medication: newborns – recommends prophylactic ocular topical medication for all newborns for the prevention of gonococcal ophthalmia neonatorum • Cervical cancer screening; women ages 21 to 65 years – screen with cytology (Pap smear) every 3 years, or for women ages 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years • Sexually transmitted infections counseling: intensive behavioral counseling for all sexually active adolescents and for adults who are at increased risk for sexually transmitted infections. • Syphilis screening: nonpregnant persons – screen persons increased risk for syphilis infection • Syphilis screening: pregnant women – screen all pregnant women for syphilis infection
ACIP Vaccine Recommendations[2]
• routine HPV2 or HPV4 vaccination of females aged 11 or 12 years, and catch-up vaccination for females aged 13 through 26 years • routine HPV4 vaccination of males aged 11 or 12, and catch-up for males aged 13 through 21
Bright Futures (AAP and HRSA)[3]
• STI screening for all sexually active 11–21 year olds • Screening for cervical dysplasia in all sexually active girls as part of a pelvic exam beginning within 3 years of onset of sexual activity or at age 21, whichever comes first
HRSA Women's Preventive Services[4]
• Annual STI counseling for all sexually active women • High-risk HPV DNA testing in women with normal cytology results, beginning at 30 years of age and occurring no more frequently than every 3 years

Note: there is some overlap in the USPSTF and HRSA recommendations. USPSTF = U.S. Preventive Services Task Force. ACIP = Advisory Committee for Immunization Practices. AAP = American Academy of Pediatrics. HRSA = Health Resources and Services Administration.

[1] USPSTF A and B recommendations available at: http://www.uspreventiveservicestaskforce.org/uspstf/uspsabrecs.htm.

[2] ACIP recommendations available at: http://www.cdc.gov/vaccines/hcp/acip-recs/index.html.

[3] Bright Futures: http://www.aap.org/en-us/professional-resources/practice-support/Periodicity/Periodicity%20Schedule_FINAL.pdf

[4] HRSA guidelines for women available at: http://www.hrsa.gov/womensguidelines/#footnote

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Table 3

Policy assessments and evaluations: Health care system and other policies with potential to impact STD prevention

Citation/Source	Type of Policy	Specific Focus	Population	Data Collection Methods	Significant Findings
Health care system					
Long et al (2012)[46]	MA health reform	Evaluation	MA adults aged 19–64	Telephone survey	• Percent insured increased from 87% in 2006 to 94% in 2010. • Health care use increased by: – 5% for usual place for care – 6% for preventive services visit
Drainoni et al (2014)[47]	MA health reform; changes in funding and delivery of STI services (termination of public funding & introducing a fee)	Evaluation	Patients of large urban safety net medical center (4 locations)	Medical records	• Overall, patient visits decreased, but varied by location (decreases at STI clinic after $75 fee introduced, increases on primary care).
Whitmer et al (2006)[48]	Third-party billing	Evaluation: regional billing groups	Kansas (6 health districts)	Facilitated feedback sessions with 15–25 participants per district	• Reimbursements reportedly increased 50–75% with funds used for clinical services
Kawatu et al (2014)[49]	Third-party billing	Assessment	STD programs and clinics (340B eligible)	Survey	• A quarter of STD clinics were not billing; 30% billed Medicaid only; and 45% billed Medicaid and private insurance.
PHLR (2014)[51]	Third-party billing	Assessment	Statutes: 50 states and DC	Legal research methods	• Some policy barriers were identified; however, only 8 jurisdictions had statutes that required health departments to provide free services for STD.
Guttmacher (2014)[57]	Minors' access to STI services	Assessment	State statutes	Legal research methods	• All states & DC allow minors to consent to STI services; however, age of consent differs. • 18 states allow physicians to inform parents when an adolescent seeks a STI service.
English et al (2012)[58]	Confidentiality for insured dependents	Assessment	State statutes	Legal research methods	• Laws in most states do not provide for complete confidentiality: almost half of states presume sending health communications (e.g. explanation of benefits, EOB). • 8 states have laws that may aid in maintaining confidentiality for insured dependents.
General policies					

Citation/Source	Type of Policy	Specific Focus	Population	Data Collection Methods	Significant Findings
Chesson (2012)[59]	Economic policies	Review of previous research	Economic policies relationship to STD	Scientific review	• Higher welfare payments associated with higher STD rates. • Two U.S. studies found that higher alcohol taxes related to later decreases in some STD among men. • Alcohol availability related to gonorrhea.
Grossman et al (2005)[60]	Alcohol policy	Evaluation	National alcohol taxes & zero-tolerance laws	Multiple existing data sources	• Alcohol taxes and zero-tolerance laws were related to gonorrhea rates in young men; however, no association was found for blood alcohol content or dry county policies.
Cooper et al (2014)[63]	Public housing policy (closing complexes and dispersing residents geographically)	Evaluation	172 residents of 7 public housing complexes	Baseline and 3 follow-up surveys (including biomarkers) & census data	• Reports of having casual sex partners and STI prevalence declined over time (post-relocation).