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1 **Title:** Health services provided at the time of abortion in the US: a scoping review of the qualitative and
2 quantitative evidence

3 **Authors:**
4 Katherine M Mahoney [a 1]
5 Licia Bravo [a 1]
6 Arden McAllister, MPH[b]
7 Kacie Bogar, MS [d]
8 Sean Hennessey, PharmD, PhD [d]
9 Courtney A. Schreiber, MD MPH [a,b,c]
10 Alice Abernathy MD, MSHP[b,c]
11
12 a. Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, United States
13 b. Department of Obstetrics and Gynecology, Perelman School of Medicine, University of Pennsylvania,
14 3737 Market Street, Philadelphia, PA, 19104, United States
15 c. Leonard Davis Institute of Health Economics, University of Pennsylvania, 3641 Locust Walk,
16 Philadelphia, PA 19104, United States
17 d. Center for Real-World Effectiveness and Safety of Therapeutics, Department of Biostatistics,
18 Epidemiology, and Informatics, Perelman School of Medicine, University of Pennsylvania, Philadelphia,
19 PA
20 1. Shared authorship
21
22 **Corresponding Author:**
23 Alice Abernathy, MD
24 3701 Market Street, Philadelphia, PA, 19104, United States
25 Email: Alice.Abernathy@pennmedicine.upenn.edu
26
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Abstract:

Objectives: While it is well documented that abortion access is associated with improved health, pregnancy-related, and socioeconomic outcomes, the association between abortion access and other reproductive health outcomes is less well described. Abortion-providing clinics also offer preventative reproductive health services. We conducted a scoping review to ascertain the extent to which preventive reproductive healthcare services (contraception, sexually transmitted infection testing and treatment, cervical cancer screening) are affected by abortion access in the United States.

Methods: Researchers screened articles and extracted data from PubMed, Embase, Scopus and CINAHL. We excluded articles that did not link abortion to contraception, sexually transmitted infection testing and treatment and cervical cancer screening; or took place outside the US.

Results: 5,359 papers were screened, 74 were included for full text review. Sixty-five were about contraception, seven on STIs, one on cervical cancer screening, and one on other services. The association between policies that restrict or protect abortion access and preventative health services has not been studied on a national scale. Drivers of variation were: insurance and billing policies; regulatory requirements of abortion-providing facilities, lack of staff training in clinics that did not specialize in abortion care; and limited follow up after abortion.

Conclusions: Abortion--providing clinics are a highly utilized access point for reproductive health services. More research is needed to determine the public health impact of constrained abortion access on contraceptive use, STI rates and cervical cancer in regions where many abortion-providing clinics have closed.

Implications: Attention should be paid to changing trends in contraceptive use, STI rates and cervical cancer as abortion-providing clinics close, this may reduce access to reproductive health services broadly.

Keywords: abortion, contraception, sexually transmitted infection, preventative healthcare, policy, access

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60

61 **1. Introduction**: While state-level incursions on abortion provision created barriers to abortion care
62 prior to the Dobbs v. Jackson Women's Health Organization (Dobbs) decision in June 2022, the Dobbs
63 decision precipitously reduced the number of abortion-providing clinics in the United States (US) (1, 2).
64 State legislation restricting abortion, often resulting in abortion clinic closure, has outpaced legislation
65 expanding abortion access (3).

66 Constrained abortion access affects public health through changes in birth rate, maternal
67 morbidity and mortality, and provider training (4). Abortion clinics are a site for comprehensive
68 reproductive healthcare delivery, including contraception (5-7), sexually transmitted infection (STI)
69 testing and treatment (8, 9), cervical cancer screening (7, 8), and other preventative health services .
70 Neither the distribution of contraception, STI testing and treatment, cervical cancer screening at
71 abortion-providing clinics, nor the impact of abortion-related policy changes on these services have
72 been systematically examined.

73 Without a synthesis of existing literature, understanding the full impact of policies that restrict
74 or expand abortion access is limited. Thus, we conducted a scoping review to: (1) outline the current
75 status of providing comprehensive reproductive healthcare at the time of abortion; (2) describe how
76 policy changes have exacerbated existing barriers or facilitated delivery of these services at the time of
77 abortion and (3) identify knowledge gaps regarding how this rapidly evolving policy landscape has
78 affected delivery of other reproductive health services by abortion-providing clinics.

79 **2. Materials and Methods:**

80 **2.1 Protocol and registration**

81 We followed the PRISMA guidelines for scoping reviews. We registered the protocol with Open
82 Science Framework.

83 **2.2 Scope**

84 We aimed to examine the extent to which comprehensive reproductive health services, defined
85 as contraception, STI screening and treatment, cervical cancer screening, are offered at US abortion-

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86 providing clinics, and highlight knowledge gaps in the geographic distribution of reproductive healthcare
87 at the time of abortion. The key questions addressed in this review are:

88 1. What is the current status of contraception provision, STI screening and treatment, cervical
89 cancer screening at the time of abortion or in clinics that provide abortion?
90 2. What are the effects of abortion policy changes or clinic closures on reproductive health services
91 (contraception, STI testing, cervical cancer screening) in abortion-providing clinics?
92 3. Identify knowledge gaps regarding how clinic closures and policy changes have affected delivery
93 of such care.

94 Articles were eligible for review if they related contraception, cervical cancer screening, STI
95 screening/treatment/rates to abortion access, demand or provision. Articles on abortion access alone or
96 those with a non-US focus were excluded. We did not restrict by year of publication or study design.

97 **2.3 Search and Screening Strategy**

98 We developed our search strategy in consultation with a librarian at the University of
99 Pennsylvania, recommendations from team members with experience conducting scoping reviews, and
100 published guidelines(10). We searched PubMed, Embase, Scopus and CINAHL from inception to March
101 24, 2023: (Table 1).

Database	Search Strategy	Number of Results
PubMed February 28,2023	((((pap smear) OR (sexually transmitted infection)) OR (contraception))) AND (abortion, induced)) AND ((((((closure) OR (abortion ban)) OR (state policy)) OR (Dobbs)) OR (access)) OR (utilization))	4,306
Embase March 12, 2023	('pap smear'/exp OR 'pap smear' OR (pap AND ('smear'/exp OR smear)) OR 'sexually transmitted infection':ti,ab,kw OR contraception:ti,ab,kw) AND ('abortion ban':ti,ab,kw OR 'state policy':ti,ab,kw OR dobbs:ti,ab,kw) OR 'abortion, induced':ti,ab,kw	444
Scopus March 20, 2023	(abortion) AND ((access) OR (abortion AND ban) OR (abortion AND bans) OR (closure) OR (state AND policy) OR (abortion AND restrictions) OR (Dobbs)) AND ((contraception) OR (sexually AND transmitted AND infection) OR (pap AND smear)) AND ((utilization) OR (use) OR (availability) OR (provision))	236
CINAHL March 24, 2023	TX (abortion) AND ((access) OR (abortion AND ban) OR (abortion AND bans) OR (closure) OR (state AND policy) OR (abortion AND restrictions) OR (Dobbs)) AND	373

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	((contraception) OR (sexually AND transmitted AND infection) OR (pap AND smear)) AND ((utilization) OR (use) OR (availability) OR (provision))	

102 Table 1: Search strategy for each database performed inception to March 24, 2023.

103 References were uploaded into Covidence (11). Each title and abstract was reviewed by two of
104 the five reviewers. We required consensus between two reviewers for full text review. Conflicts were
105 resolved by discussion and consensus among all reviewers. One of five authors reviewed the full text
106 and abstracted data. An additional author reviewed the extracted data before it was finalized.

107 **2.4 Data Extraction**

108 We extracted study ID, title, authors, inclusion criteria, region of US, methods, aims, study
109 design, start date, end date, participants, population, total participants, and patient-, public health-, and
110 policy-related outcomes. We organized data by reproductive health service delivered at the time of
111 abortion (contraception, STI testing/treatment, cervical cancer screening). We identified policy changes
112 that affected the above-listed outcomes. We did not conduct a critical appraisal or synthesis of the study
113 findings, as this is not recommended for scoping reviews.

114 **3. Results:**

115 A total of 5,359 papers were eligible for initial review. After excluding duplicates, non-US
116 studies, or that did not link contraception, STIs, or cervical cancer screening to abortion access, demand
117 or provision, 74 papers were included for full text review (Fig 1). There were 65 papers on
118 contraception, seven on STIs, one on cervical cancer screening, and one on other healthcare services.
119 Some papers crossed categories (Table 2). Publication years ranged from 1974 to 2023 and designs
120 included randomized control trials, cohort and cross-sectional studies, qualitative, systematic review,
121 and opinion pieces.

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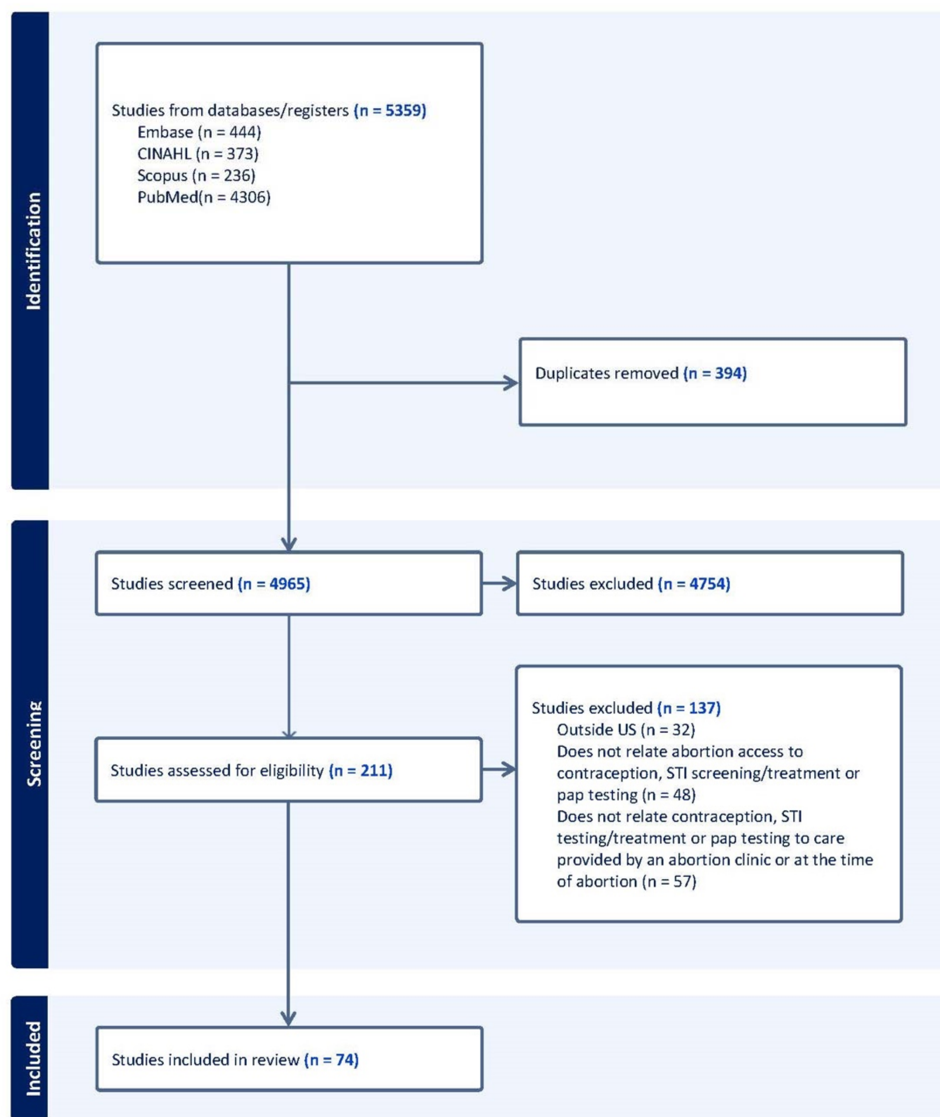

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123 **Figure 1.** PRISMA diagram of studies screened and included in review.

124

Theme	Author, year	Aim/Objective	Outcome
Contraception	ACOG 2021	To issue a statement in support of access to postabortion contraception.	Offering management of EPL and abortion together with the full range of contraceptive methods, as well as streamlining referral and follow-up visits, can improve continuity of care.
Contraception	Biggs 2017	To assess post-procedural abortion contraceptive use and the role of insurance coverage for abortion in California, a state that covers abortion and contraception for low-income women.	Most patients left their appointment with a contraceptive method (one in five using a LARC), and the most were still using a method at four weeks. Insurance coverage was significantly associated with contraceptive uptake at the time of abortion: women who paid with insurance (Medicaid or private) were significantly more

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			likely to receive LARC compared with women who did not use insurance to pay for their abortion.
Contraception	Bryant 2018	To understand practices, preferences, and barriers to use of contraception for women obtaining abortions at clinics in North Carolina.	Cost is a barrier to contraception use even when it is desired; only clinics that accepted insurance offered LARC at time of abortion, and a majority only offered short supply of OCPs.
Contraception	Cannon 2021	To explore how physicians conceptualize their role in contraceptive counseling at the time of abortion, including identifying clinician attitudes that may lead to patients' perceptions of contraceptive coercion	Physicians encouraged contraception use after abortion, especially after multiple abortions, and LARC use among adolescents.
Contraception	Chor 2020	To evaluate a training protocol and curriculum that provided nonmedically trained individuals with knowledge, skills, and competency to conduct a post-abortion contraception counseling intervention.	Participants found the intervention acceptable and felt comfortable discussing contraception and reproductive healthcare with the lay health workers, who reported feeling comfortable discussing postabortion contraception.
Contraception	Clement 2022	To evaluate the role of geography in post-abortion contraception choice and prior contraceptive barriers.	Surveyed patients intended to start contraception after an abortion; the type of desired contraception did not vary by urbanicity, though patients who experienced difficulty getting contraception previously were more likely to use LARC.
Contraception	Cottrill 2021	To assess uptake of postabortion contraception across changes in insurance regulations and insurance type used on the day of abortion, accounting for demographic characteristics and consent type for abortion among Massachusetts adolescents.	From 2010 to 2016, the proportion of minors leaving without a contraceptive method significantly dropped, and LARC placement significantly increased. Both LARC and SARC were more prevalent among minors with Medicaid or private insurance compared to those not using insurance on the day of abortion, even when accounting for consent type and demographic characteristics.
Contraception	Cowett 2018	To compare the 6-month use rate of the etonogestrel implant placed immediately after D&E vs. placement 2-4 weeks post-procedure	The vast majority of immediate placement implant patients continued use at six months, of those who waited 2-4 weeks for implant placement two-thirds of those had continue use. Many of those who did not attend the 2-4-week follow-up were not using any contraception or were using barrier methods.
Contraception	Dobie 1998	To survey reproductive health services available through clinics in rural Washington state.	Most clinics provided contraception (nonprescription, oral or injectable), STI testing, pap smears and colposcopy, breast exams; only one provided abortion due to funding restrictions.
Contraception	Felkey 2014	To examine whether restrictive abortion legislation for minors and provider availability in a patient's state of residence influences OCP use.	Women less than 18 years of age experience greater financial and opportunity cost with abortion, less abortion access is associated with greater OCP use.
Contraception	Ganti 2019	To review current literature on abortion and contraception in adolescents given changing politics.	Improved access to contraception and abortion services is significantly lowering unintended pregnancies rates in adolescents, but more data assessing the effectiveness of interventions in marginalized communities are needed.

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Contraception	Goodman 2008	To evaluate the cumulative impact of three different interventions on IUD utilization in a Northern California Planned Parenthood agency: (1) immediate post-abortion IUD insertion, (2) staff and clinician IUD training, and (3) simplified screening criteria for low-risk candidates for interval IUD insertion on the same day as screening.	Cost barriers to IUD insertion are central to low utilization; however, increased use can be achieved by staff training and protocol changes that expand post-abortion IUD use (both immediate and interval).
Contraception	Goyal 2017	To compare preference for LARC and subsequent use, year-long continuation, and pregnancy among women after induced abortion who were and were not eligible to participate in a specialized funding program that provided LARC at no cost.	Despite high preabortion preference for LARC among low income and uninsured participants, those who were eligible for the funding program were ten times more likely to receive postabortion LARC than low income, ineligible women, who were far more likely to use less effective contraception and become pregnant.
Contraception	Grossman 2014	To discuss how anti-abortion legislation is harmful to public health and goes against core principles of medicine using a 2015 Texas law requiring abortion-providing clinics to meet ambulatory surgery center standards and mandated admitting privileges.	State funding to family planning clinics in the dropped from $4.3 million in 2010 to $1.4 million in 2012, resulting in clinic closures, reductions in service hours at many remaining locations, and limited availability of LARC.
Contraception	Harper 2015	To assess the effects of a training on counseling and inserting an IUD or progestin implant increases patients' access to long-acting reversible contraceptives (LARCs) on pregnancy rates.	Patients who received counseling were more likely to pick LARC; however, even when desired, LARC was more difficult to obtain immediately after abortion because of funding restrictions.
Contraception	Iyer 2022	To examine preferences for contraceptive counseling and access among abortion patients in a legally restrictive setting in Texas.	Most patients were uninterested in contraceptive counseling at their visit, and one-third preferred to obtain birth control from the provider they visit for other health care needs. Most declined counseling because they had already chosen a method, initiating contraceptive methods without a counseling session may be appropriate.
Contraception	Jacobs 2015	To evaluate how women adjust their contraceptive behaviors when faced with restrictive abortion polices.	Women living in states with low abortion access or in abortion-hostile states were more likely to use LARC.
Contraception	Jerman 2019	To update previous work on challenges providing contraceptive care, describe challenges in providing contraceptive care in independent abortion settings following the Affordable Care Act, and strategies to address these challenges.	Suggested strategies to manage challenges related to new contraception Affordable Care Act guidelines and issues with coverage and reimbursement included: (i) protocols to address patient needs regarding receiving contraception during abortion care; (ii) expanding clinical services to offer primary, comprehensive and/or well-woman care; (iii) training and/or utilizing advanced practice clinicians such as nurse practitioners to insert IUDs; (iv) increasing staff available for insertions; (v) negotiating directly with pharmaceutical companies for reduced rates on contraceptive methods; and (vi) working to

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			qualify for 340B drug pricing and other federal or public funding programs to help with the cost of care.
Contraception	Kavanaugh 2010	To provide an overview regarding the extent to which facilities that provide abortion services in the United States are able to provide contraceptive services.	Virtually all abortion clinics incorporate contraceptive education into abortion care, the three most common methods reported were pill, vaginal ring, and Depo-Provera; fewer offered post-abortion IUD insertion. When offered, patients do not pay additional fees for contraceptive services because they are included in the cost of abortion.
Contraception	Kavanaugh 2011	To document attitudes of abortion patients about contraceptive services during their receipt of abortion services and identifies patient characteristics associated with desire for contraception and interest in using a LARC method.	Over two-thirds felt that the abortion setting was appropriate for receiving contraceptive information and reported receiving both contraceptive education and a contraceptive method during their abortion care (40% pill, 24% condoms, 10% contraceptive ring).
Contraception	Kavanaugh 2011	To identify and examine barriers to integrating contraception into abortion services and examine the association between perceived barriers and the range of contraception provided at the facility.	Acceptance of insurance coverage for contraception significantly increased ability to offer contraceptive methods. State Medicaid coverage of abortion was associated with likeliness of accepting public and private health insurance for contraceptive services.
Contraception	Krashin 2014	To estimate the number of unintended pregnancies, financial costs, quality-adjusted life years, and cost-effectiveness associated with the Oregon and federal policy barrier to tubal occlusion at the time of abortion.	Desired concurrent tubal occlusion and abortion would result in fewer unintended pregnancies, lower costs, and greater quality-adjusted life years compared to requiring a follow-up for tubal occlusion after abortion.
Contraception	Krashin 2017	To evaluate whether contraceptive insurance coverage for women who present for an abortion is associated with obtaining long-acting reversible contraception or depot medroxyprogesterone acetate (DMPA) on the day the abortion is completed.	Those with insurance coverage were five times more likely to receive immediate postabortion DMPA or LARC compared to those without coverage; when LARC is available for free in an abortion clinic, uptake of LARC was 10-fold higher than days when no free LARC was available.
Contraception	Langston 2014	To evaluate whether having IUDs, contraceptive implants, and injections immediately available to women undergoing abortion, compared to requiring an additional visit for these methods, led to fewer pregnancies and fewer abortions in the following 12 months.	Immediate post-abortion insertion participants were more likely to initiate an IUD or implant, had fewer pregnancies, fewer additional abortions, and fewer births over the following 12 months compared to those who had a separate visit for contraception.
Contraception	Laursen 2017	To compare contraception provided to patients after medication and surgical abortions.	Compared to medication abortion, procedural abortion is associated with greater LARC initiation and likelihood of contraceptive method initiation, potentially because medication abortion patients had to return for follow-up to initiate LARC and one-fourth of patients did not return for follow-up.
Contraception	Lerner 1974	To evaluate programs, services, policies, and gaps in care provided	A serious weakness of abortion clinics is that most do not offer continuing care for

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		by NYC abortion facilities during a period when New York was one of the few places to access legal abortion prior to Roe v. Wade.	contraception; free-standing clinics are particularly lacking in contraceptive follow-up, primarily because the vast majority of their patients are from out of state.
Contraception	Lilja 2021	To assess the proportion of Washington state clinics that offer the copper IUD in rural vs urban settings.	More urban clinics offered copper IUD than rural clinics. Family planning, multispecialty, and OB/GYN-specific clinics had greater copper IUD availability than primary care clinics; however, many clinics referred to Planned Parenthood to place post-abortion IUD, even when the clinic had IUD available.
Contraception	Lindheim 1979	To evaluate the structure, services provided, and patients served by nonhospital abortion clinics and hospital abortion service providers.	Abortion counseling, contraceptive counseling and contraceptive drugs and devices were offered by almost all clinics, with little variation by number of abortions performed; hospitals with larger abortion caseloads and public hospitals were far more likely to offer these services than hospitals with smaller abortion caseloads and private hospitals.
Contraception	Madison 2023	To evaluate how the availability of contraceptive services was associated with a change in abortion rate before and after Texas' changes to the family planning budget in 2011 and changes in abortion access in 2013.	The rise in total number of publicly funded family planning clinics increased slightly between 2010 and 2015, this was driven by federally qualified health centers, half of the specialized family planning clinics closed; this redistribution was associated with a decrease in the total number of contraceptive clients served and potentially inadequate family planning services.
Contraception	Mastey 2021	To describe the prevalence of medications for opioid use disorder (MOUD) among surgical abortion patients, LARC uptake after surgical abortion among patients on MOUD, and identify predictors of immediate postabortion LARC uptake among individuals on MOUD.	Nearly 3% used MOUD; MOUD was not an independent predictor of LARC uptake, but it was associate with immediate LARC insertion after procedural abortion.
Contraception	McNicholas 2012	To determine patient satisfaction, continuation, and bleeding profiles with postabortion IUD insertion and determine the feasibility of collecting such data in this setting.	Continuation and satisfaction rates were high (80.5% and 80.6%, respectively) at nine months follow up; reported bleeding patterns with IUD use were similar to previously reported patterns.
Contraception	Postlethwaite 2018	To assess contraception initiation and repeated unintended pregnancies among women receiving abortions in Kaiser Permanente Northern California (KPNC) and contracted facilities.	Women having abortions from contracted facilities were less likely to initiate LARC immediately post-abortion, within 14 days, and 90 days compared to those who received an abortion at a KPNC facility; those initiating short-acting or no contraception were significantly more likely to have an unintended pregnancy within 12 months of abortion compared to those who initiated LARC.
Contraception	Reeves 2007	To model rates of pregnancy and repeat abortion among women choosing intrauterine contraception after an abortion when the intrauterine device (IUD) is inserted immediately after the procedure or at a follow-up visit.	Immediate post-abortion IUD insertion would significantly reduce the number of pregnancies within a year compared to delayed initiation, even if only 20% of abortion patients opted for immediate IUD insertion.
Contraception	Rocca 2016	To evaluate a clinic-wide LARC	The training intervention had a statistically

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		training intervention and to examine the effect of the intervention, insurance coverage, and funding policies on the use of long-acting contraceptives after an abortion.	significant but limited effect on LARC uptake because more importantly, insurance status and insurance use to pay for abortion were associated with LARC initiation; modeling suggests that more inclusive and expansive insurance policies would result in a significant increase post-abortion LARC initiation.
Contraception	Rocca 2018	To investigate the difference in contraceptive counseling, method choices, and use between medication and aspiration abortion patients.	Counseling about and interest in LARC was equivalent between medication and procedural abortion patients; however, unlike SARC (which is initiated during the abortion visit regardless of abortion type), medication abortion patients were significantly less likely to initiate LARC within a year of the abortion, likely because LARC initiation required a follow-up visit.
Contraception	Rodriguez 2022	To determine the impact of the Reproductive Health Equity Act on low-income immigrant Oregon women's use of moderately or highly effective methods of contraception after abortion	Policy that increased postabortion contraception access resulted most or moderately effective postabortion contraceptive usage by two-thirds of participants and a substantial transition from lower efficacy to more effective method postabortion, a finding that was not modulated by citizenship or rural location.
Contraception	Rodriguez 2023	To describe changes in travel distance for abortion among counties with low rates of effective contraceptive use in Medicaid populations after the Dobbs v Jackson ruling.	After the Dobbs v Jackson decision, the number of women living in counties with low contraceptive use and restricted abortion access would quadruple.
Contraception	Roe 2019	To present an evidence-based assessment of provision of contraceptives at the time of surgical abortion that address clinical considerations for postabortion contraceptive provision and recommend interventions to improve contraceptive access following uterine evacuation.	Most methods of contraception, including LARC, SARC, and some permanent methods, can be safely initiated immediately after first- or second-trimester procedural abortion and LARC substantially reduces subsequent unintended pregnancy.
Contraception	Roe 2019	To estimate uptake of LARC methods immediately after surgical abortion in Massachusetts, and to determine demographic, medical, social, and visit-specific predictors of immediate post-abortion IUD and implant initiation.	One-fourth received immediate post-abortion LARC; Black women were less likely to initiate LARC compared to white women. When LARC is accessible, received method aligns with their desired method.
Contraception	Salcedo 2013	To evaluate the potential public sector cost savings of immediate postabortion IUD insertion in California.	Over five years, for every 1000 low-income women who undergo immediate postabortion IUD placement, more than 400 pregnancies, 180 deliveries, and 160 abortions will be averted. In one year, immediate postabortion IUD provision decreases public program expenditures by US$111 per woman in direct costs of contraception and pregnancy-related care compared to planned IUD placement at follow up, which increases to $4296 per woman over 5 years when public health and social program costs are also considered.

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Contraception	Schreiber 2015	To review the current states of family planning (as of 2015), as well as technologies and patient care opportunities for the future.	The postabortion period presents a key access point to initiate contraception, especially immediately after abortion, given that a third of abortion patients do not return for follow-up. There is conflicting evidence about the role of financial barriers on LARC uptake and provider misconceptions about post-abortion LARC initiation.
Contraception	Shulman 1976	To survey the subsequent pregnancy rates in a group of women who accepted a variety of contraceptive methods after delivery and after abortion.	Among those who started a contraceptive option immediately after an induced abortion, 1.8-5.3% of women using oral contraceptives and 9-24% of women using other methods had repeat abortions within 1 year of an induced abortion.
Contraception	Sonalkar 2013	To determine satisfaction and continuation rates of the contraceptive implant when placed on the initial visit for first-trimester medication abortion.	All participants had complete abortions, and at one year, the majority were satisfied and continued implant use; several participants did not attend their follow-up appointment thus, may not have received LARC if they didn't receive it during their abortion visit.
Contraception	Sonfield 2014	To respond to a study advocating for the elimination of restrictions on postabortion sterilization, focusing instead on the need to increase access to reversible postabortion contraception and how these efforts could meet the same outcomes as postabortion sterilization without raising ethical issues.	Abortion in the United States is increasingly concentrated among low-income women, who often struggle to pay for the abortion procedure itself along with related expenses such as transportation, a hotel, and childcare; additional costs for contraception only compound these problems.
Contraception	Stacey 2015	To investigate whether trust in the healthcare system or other patient-level characteristics are associated with interest in immediate initiation of LARC after abortion.	Intention to use LARC postabortion increased when LARC placement was available on the day of abortion but was not modulated by trust in the healthcare system.
Contraception	Steinauer 2014	To investigate whether immediate initiation of the transdermal patch after surgical abortion led to higher use of the transdermal patch at six months compared with initiation on the Sunday after the abortion.	The rate of patch continuation and new pregnancies did not differ by timing of initiation.
Contraception	Steinauer 2015	To identify factors associated with the choice of highly effective, long-acting, progestin-only contraceptive methods after abortion.	Race/ethnicity, past contraceptive use, feelings towards pregnancy, stress and weight were different between LARC and DMPA users. Current IPV was associated with choice of DMPA over the IUD or implant, implying that a desire to choose a hidden method may be important to some women and should be included in counseling.
Contraception	Taylor 2014	To characterize the acceptance of immediate post-abortion IUD insertion in an urban, low income, largely Latina population in Los Angeles.	When provided for free, IUD uptake is strong across racial and ethnic groups.
Contraception	Thompson 2011	To assess National Abortion Federation member facilities' post-abortion contraceptive practices and measure variations in	Contraceptive provision was nearly universal, and two-thirds provide IUDs, of which half offered immediate post-abortion placement. Post-abortion provision of LARC was lower in stand-

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		provision of LARC by clinic factors and state contraceptive laws and policies.	alone abortion clinics and was associated with state insurance policies. Reported barriers to immediate post-abortion LARC provision include high costs to patient, inadequate reimbursement, billing challenges, and insurance denials, which often co-occurred.
Contraception	Thornton 2023	To respond to physicians' perspectives regarding patients' informational and decision-support needs, the complexities of contraceptive counseling, and access to permanent contraception after the Dobbs decision.	Bias and discrimination influence counseling practices, creating differences in permanent contraception use based on race, socioeconomic status, insurance, and education. Clinicians must employ best practices in shared decision-making contraceptive counseling and use the structural competency framework to uphold the principles of reproductive justice and contraceptive autonomy.
Contraception	Tsao 2014	To outline current insurance policies that limit access to post-abortion LARC, despite current evidence supporting the reduced risk of subsequent unintended pregnancies when immediate post-abortion LARC is available.	Reimbursement policies that preclude providers from receiving the full cost of LARC provision immediately after abortion are a key barrier to post-abortion contraception.
Contraception	Turok 2009	To evaluate whether there is an association between statewide increases in levonorgestrel emergency contraception use and birth, fertility, and abortion rates in Utah.	Emergency contraception usage was inversely correlated with birth rate and abortion rate; increased yearly use of emergency contraception increased alongside a decline in abortion and birth.
Contraception	Vela 2018	To survey state Medicaid payment policies and outreach activities related to LARC to explore how policy influences LARC use.	Although most states cover outpatient LARC under Medicaid, there is variability in coverage for family planning counseling and LARC insertion, removal, and follow-up; LARC access included coverage expansion, supply chain changes, and reimbursement of LARC insertion immediately after an abortion increased LARC access.
Contraception	Vohra-Gupta 2022	To compare contraception placement and options counseling between clinics affiliated with abortion provision compared to those were not.	Onsite LARC provision and options counseling were less likely to be offered in clinics that did not provide abortion; referral for prenatal care was equivalent across clinic type.
Contraception	Wall 2022	To determine the impact of brief pre-visit counseling on LARC interest and uptake immediately after abortion.	A brief pre-visit counseling intervention increased LARC interest and LARC uptake.
Contraception	Whaley 2015	To review current medical abortion literature because medical abortion using mifepristone and misoprostol comprises a growing proportion of abortions performed in the United States	Most contraceptive options can be initiated the same day as mifepristone administration to improve contraceptive use after medication abortion.
Contraception	White 2012	To evaluate the effects of 2011 Texas legislation that aimed to limit funding for family planning clinics, particularly those that provide abortions, and resulted in the closure of half of family	25/76 nonpublic entities that provide family planning only closed, and 29/76 reduced their hours. Half of the organizations lost all funding and 340B discount program eligibility, passing on higher cost of LARC to patients. Clinics that remained open now rarely offer IUDs or implants

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		planning clinics in the state.	because of high upfront costs and severe budget cuts and offer fewer short-acting contraceptive doses per visit.
Contraception	White 2019	To assess whether first-trimester aspiration abortion practices of US providers are aligned with evidence-based guidelines.	Clinicians frequently offer contraception on the same day as aspiration abortion, including LARCs (74% IUD, 61% implant) and short-acting contraception (97% contraceptive pill, 91% injection, 87% ring, and 80% patch).
Contraception	White 2020	To assess Mississippi women's interest in post-abortion contraceptive counseling and method use and the extent to which their method preferences were met.	A majority of participants felt that abortion-related visits were the best time for contraceptive counseling and wanted to initiate contraception at the clinic, yet few obtained a method on site or were using their preferred method at follow-up, usually because of cost and lack of insurance; the difference between desire and use at follow-up was greatest for LARC.
Contraception	Witwer 2020	To examine service delivery in clinics that provided abortions in 2017, including differences by abortion policy environment.	Most clinics offered standalone contraception and gynecological care, but the proportion of clinics that provided these services was higher in states supportive of abortion than states hostile to abortion. Nonspecialized clinics were more likely to provide all types of nonabortion care compared to specialized clinics.
Contraception and Other Services	Hammerslough 1990	To present data on contraceptive counseling and use for abortion patients in Ohio.	The pill was the most recommended form of contraception by providers, regardless of what contraceptive method the individual was previously using. Psychological, medical, social service and other forms of counseling were provided at the time of abortion.
Contraception and STI Testing/Treatment	Lee 2019	To determine follow-up rates for adolescent patients who underwent medical abortion compared with adult patients, identify patient factors associated with follow-up, and evaluate contraceptive choices at the time of follow-up.	Follow-up rates were low in both adolescents and adults, among those who followed up, one-fifth of adolescents chose a "most effective" option for ongoing pregnancy prevention. Four out of five adolescents received routine screening for STIs at time of abortion visit with a one in five positivity rate.
Contraception and STI Testing/Treatment	McNicholas 2014	To evaluate the CHOICE Project's free LARC intervention among patients who had received a recent abortion at community centers providing abortion services in St. Louis.	Over one-fourth of participants with a recent history of abortion received immediate contraception, and those who received immediate post-abortion contraception were more likely to choose LARC compared to women without a recent history of abortion. The STI rate was higher in this population than the national average; Black women were four times more likely than White women to test positive for an STI.
Contraception, STI Testing/Treatment, and Cervical Cancer Screening	O'Connell 2009	To assess the first-trimester surgical abortion practices of National Abortion Federation (NAF) members.	Almost all NAF member facilities provide contraceptive care, particularly short-acting reversible contraceptive methods. Many facilities perform STI testing and pap smears if clinically indicated.
Contraception and STI Testing/Treatment	Patil 2015	To review data on immediate post-procedural abortion IUD insertion.	IUD insertion is safe immediately after first trimester aspiration and second trimester D&E procedures for abortion or pregnancy loss. Risk of expulsion increases slightly with increasing uterine size at the time of placement. Providing

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			immediate highly effective contraception increases continuation and decreases unintended pregnancy.
STI Testing/Treatment	Gokhale 2018	To examine characteristics of adolescent patients presenting for multiple abortions within 1 year and evaluate STI status at each visit.	Participants had higher baseline rates of Chlamydia and Gonorrhea than rates reported by CDC for an age-matched population. The abortion visit serves as a critical time to screen, educate, and treat patients.
STI Testing/Treatment	Lindsay 1990	To report HIV seroprevalence and risk behaviors among women requesting induced abortion at a county hospital in Atlanta, GA.	Seroprevalence rate among women receiving routine antepartum HIV screening was the same as those presenting for abortion, the primary risk factor was heterosexual transmission.
STI Testing/Treatment	Newmann 2013	To determine whether the standard practice of offering voluntary HIV counseling and testing services to women electing abortion led to detection of undiagnosed HIV infection.	HIV testing via voluntary HIV counseling and treatment did not effectively diagnosis previously undiagnosed HIV infections among women seeking abortion in this clinical setting. The authors recommend opt-out testing in family planning clinics, rather than opt-in.
STI Testing/Treatment	Park 2017	To assess the difference in prevalence of Chlamydia and Gonorrhea among women undergoing first-trimester surgical termination in a public, urban hospital-based abortion clinic.	More patients tested positive for Chlamydia than Gonorrhea. Prevalence rates remained high for both.
STI Testing/Treatment	Ralph 2021	To assess the knowledge, attitudes, and preferences of women seeking abortion care regarding their HIV risk and knowledge of PrEP and identified individual and system barriers to PrEP access.	One third of patients were eligible for PrEP, and patient attitudes toward taking PrEP and receiving a prescription from a family planning clinic were generally positive.
STI Testing/Treatment	Satish 2023	To conduct a scoping review to assess barriers to and facilitators of integrating HIV preexposure prophylaxis (PrEP) and family planning (FP) at the patient, provider, and implementation levels, and to identify gaps in knowledge.	Barriers to PrEP implementation were low PrEP knowledge and hesitance to take PrEP among patients, and limited provider willingness and resources to prescribing and monitoring PrEP. Facilitators included training, stigma reduction, leadership engagement, and resources to ease prescribing and monitoring PrEP.
STI Testing/Treatment	Srinivas 2022	To determine the change of STI rates before and after closing publicly funded family planning health centers.	Iowa's counties with clinic closures had a significantly larger increase in Gonorrhea rates between 2016 and 2018 compared with counties without clinic closures. Iowa residents were approximately 2x more likely to have a Gonorrhea infection after 2018 compared to before clinic closure. No change for Chlamydia.
Cervical Cancer Screening and Other Health Services	Ellison 2021	To evaluate changes in preventative healthcare use among females in Ohio before and after clinic closures that resulted from restrictions on public funds for organizations providing or referring to abortion care.	Reduced access to family planning clinics was associated with unmet care due to cost and a reduction in preventative service use among low-income, reproductive-aged females in Ohio.
Other Health Services	Gerber 2021	To examine whether eligible people in an under immunized population seeking abortion find the abortion visit an acceptable opportunity to receive the HPV	The abortion visit offers an important opportunity to start or to finish the HPV vaccine series. Most patients are receptive to receiving additional services and were never previously offered the HPV vaccine.

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		vaccine.	

125 Table 2. Papers that underwent full text review, organized by health service provided at abortion clinics
126 and/or at the time of abortion.

127

128 **3.1 Contraception:**

129 **3.1.1. Provision of contraception services at the time of abortion:**

130 Sixty-six studies examined contraceptive services. Most clinics offered contraceptive education,
131 though methods were not available at all clinics (Kavanaugh 2010, O'Connell 2009, White 2019, Lerner
132 1974, Kavanaugh 2011, Roe 2019, Hammerslough 1990, Bryant 2018, Lindheim 1979, Lilja 2021). Clinics
133 that primarily provided abortion care were more likely to offer IUD compared to primary care of general
134 obstetric and gynecology clinics (Lilja 2021). Clinics that accepted insurance placed more long-acting
135 reversible contraceptives (LARCs), though reimbursement for services associated with insertion, removal
136 and follow up varied by insurance (Bryant 2018, Vela 2018). Policies that restricted reimbursement for
137 abortion or care provided at the time of abortion were associated with reduced LARC provision (Bryant
138 2018, Lerner 1974, Thompson 2011, Cottrill 2021, Mastey 2021).

139 Immediate post-abortion LARC insertion was associated with reduced rapid repeat pregnancies,
140 particularly in adolescents (Ganti et al, 2019). Models of immediate LARC insertion found over 70,000
141 unplanned pregnancies (Patil et al, 2015), and 20,000 repeat abortions could be prevented annually in
142 the US if 20% of patients opted for immediate post-abortion LARC (Reeves et al 2007).

143 There was low follow up for contraception after abortion (Lerner 1974, Rocca 2018, Iyer 2022,
144 Laursen 2017, McNicholas 2012), resulting in lower LARC uptake for patients who had medical
145 compared to surgical abortions where LARC was more often placed at the time of abortion (Rocca 2018).

146 **3.1.2 Patient desire for & satisfaction with post-abortion contraception**

147 Five studies examined patients' desire for post-abortion contraception (Kavanaugh 2011, White
148 2020, Stacey 2015, Bryant 2018, Clement 2022). Patients viewed abortion facilities as an appropriate
149 place to receive contraception counseling, especially for those without a longitudinal care provider
150 (White 2020, Kavanaugh 2011). Of patients who declined contraceptive counseling, most did so because
151 they either preferred to discuss contraception closer to home, with their primary care doctor, or
152 because they already chose a contraception method (Iyer 2022). Satisfaction with LARC at the time of

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153 abortion appeared to be driven by cost and placement at the time of abortion (McNicholas 2014,
154 McNicholas 2012, Sonalkar 2013).

155 **3.1.3 Factors that affected patient's selection of contraception**

156 Numerous factors influence contraception choice at the time of abortion: interpersonal
157 violence, receipt of LARC specific counseling, sedation for abortion, and insurance coverage (Steinauer
158 2015, Biggs 2017, White 2020, Sonfield 2014, Cottrill 2021, Krashin 2017, Rocca 2016, White 2012,
159 Steinauer 2015, Roe 2019, Roe 2019, Harper 2015, Wall 2022, Rocca 2018, Goyal 2017, Iyer 2022,
160 Cottrill 2021, Mastey 2021, Thompson 2011).

161 Insurance and cost barriers limit post-abortion contraception access (White 2012, Biggs 2017,
162 White 2020, Harper 2015, Sonfield 2014, Cottrill 2021, Roe 2019, Krashin 2017, Rocca 2016, Rocca 2018,
163 Thompson 2011, Goyal 2017, Kavanaugh 2010, Bryant 2018, Kavanaugh 2011, Jerman 2019, Witwer
164 2020, Postlethwaite 2018, Vela 2018, Tsao 2014, Langston 2014, McNicholas 2014, Rodrigues 2022,
165 Schreiber 2015, Taylor 2014). Insurance coverage was associated with a 30-100% increase in LARC
166 uptake (Biggs, Rocca, Krashin Cottrill2021). Patients reported the primary reasons for not using a
167 preferred contraceptive method were lack of insurance coverage and cost (White 2020). Patients may
168 choose not use insurance for abortion-related care for confidentiality or logistical reasons (Sonfield
169 2014, Rocca 2016, Rocca 2018), and may be limited to more affordable contraceptives or forgo
170 contraceptives (White 2012).

171 Some (Roe 2019, Krashin 2017, Rocca 2016, McNicholas 2014, Goyal 2017, Rodrigues 2022,
172 Taylor 2014) but not all (Schreiber 2015) found that when cost barriers are removed, effective
173 contraception uptake increases.

174 Limited acceptance of insurance is a central obstacle in the provision of postabortion
175 contraception (Thompson 2011, Kavanaugh 2010, Bryant 2018, Kavanaugh 2011, Sonfield 2014, Harper
176 2015, White 2012, Jerman 2019, Witwer 2020, Postlethwaite 2018, Tsao 2014, Langston 2014, Vela
177 2018). The percentage of clinics that do not accept insurance varied by clinic type and location
178 (Kavanaugh 2010, Bryant 2018, Kavanaugh 2011). Reasons clinics did not accept insurance included
179 reimbursement issues (Jerman 2019, Witwer 2020, Postlethwaite 2018, Tsao 2014, Sonfield 2014,
180 Thompson 2011, Langston 2014, Vela 2018), high upfront cost of LARC (Sonfield 2014, Thompson 2011,
181 Harper 2015, White 2012), and limited experience with billing insurance (Sonfield 2014).

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182 Methods recommended to reduce insurance-related barriers included specialized funding
183 programs for post-abortion contraception (Goyal 2017), negotiating directly with pharmaceutical
184 companies for reduced rates on contraceptive methods (Jerman 2019), qualifying for 340B drug pricing
185 and other federal or public funding programs (Jerman 2019), and hiring financial counselors to address
186 patient-level barriers (Jerman 2019).

187 **3.1.4 Impact of abortion policy on contraceptive access and uptake**

188 Restrictions on providing abortion care and decreased funding for family planning clinics
189 disproportionately harmed residents in areas with already limited contraceptive access (Grossman et al.
190 2014). White et al. (2012) Access to the most effective contraceptive methods was reduced when
191 abortion-providing clinics could not purchase contraceptives through 340B programs (White et al. 2012).
192 Although the total number of family planning clinics in the form of federally qualified health centers
193 increased in Texas, there was a decrease in contraceptive clients served (Madison et al. 2023).

194 Rodriguez et al. (2023) reported that the number of Medicaid enrolled females living in counties
195 with low contraceptive use and restricted abortion access was expected to increase 46% following the
196 Dobbs ruling.

197 Thompson et al. (2011) found that states with contraceptive coverage mandates and states with
198 Medicaid family planning expansion program had higher rates of LARC use. Jacobs et al. (2015) found
199 state-level abortion accessibility and hostility did not significantly modulate contraceptive use compared
200 to individual characteristics.

201 **3.2 STI testing and treatment:**

202 Lindsay and colleagues (1990) found that most patients were amenable to HIV testing at the
203 time of abortion, and that universal screening was associated with improved detection among those
204 without reported risk factors for HIV acquisition. Newmann et al recommended opt out counseling and
205 treatment for HIV at the time of abortion (2013). Many abortion seeking patients had indications for HIV
206 Pre-Exposure Prophylaxis (PrEP), though most expressed preference for starting PrEP with their PCP
207 (Ralph et al, 2021). Satish et al. found other barriers to PrEP prescription at the time of abortion (2023).

208 Patients seeking abortion had a high prevalence of STIs (Park et al., 2017; Gokhale et al., 2018),
209 and Black women were four times more likely than White women to have multiple STIs (McNicholas,
210 2014). Among adolescents seeking abortion, 80% were screened, with 22% testing positive (Lee 2019).

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211 Srinivas et al found increased incidence of gonorrhea in counties with an abortion clinic closure
212 relative to those without a closure (Srinivas et al 2022).

213 **3.3 Cervical cancer screening and prevention:**

214 Ellison et al found that restricted public funding of organizations that provide or refer for
215 abortion was associated with reduced likelihood of receiving a pap (though this association was not as
216 robust without imputation of key variables) (2021). O'Connell et al reported more than half abortion
217 clinics perform STI testing and around half perform pap tests (2009).

218 **3.4 Other public health services**

219 Abortion clinics provide pelvic exams, pregnancy tests, hematologic assessments (Lindheim
220 1979), transgender-specific healthcare, mammogram and breast exams (Witwer et al., 2020) HPV
221 vaccination (Gerber et al., 2021), and other forms of psychological, medical, and social service
222 counseling (Hammerslough and Irizarry-Mora 1990). Ellison and colleagues (2021) found that in Ohio,
223 restriction of public funds for abortion-providing clinics led to a decrease in likelihood of receiving a
224 mammogram or breast exam; the effect was magnified as distance increased.

225 Mastey and colleagues (2021) observed the prevalence of opioid use disorder was twice the
226 national average among abortion seeking patients (2.9 vs 1.5%), and proposed abortion clinics may
227 present opportunities for opioid use screening and referral to care and treatment if desired.

228 **4. Discussion:**

229 Findings from this scoping review suggest contraception, STI testing, and treatment and cervical
230 cancer screening are acceptable to patients seeking abortion. Such care is consistent with guidelines
231 endorsed by the Society of Family Planning and American College of Obstetricians and Gynecologists (5,
232 12). We anticipated variability in provision of contraception, STI testing and treatment and cervical
233 cancer screening across abortion providing clinics and hypothesized the primary driver of variation of
234 service provision was reimbursement difficulties and onerous operations requirements mandated at the
235 state level. We did not find any national studies of the relationship between abortion policy and
236 provision of contraception, STI testing and treatment, and cervical cancer screening. We found the most
237 common drivers of variation in reproductive health service provision were: national and state insurance
238 and billing policies that resulted in reimbursement challenges for care provided at the time of abortion,

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239 or by an abortion facility; facility capacity to provide services at the time of abortion; lack of staff
240 training in clinics that did not specialize in abortion care; and limited patient follow up after abortion.

241 Abortion-providing clinics are a point of healthcare access for many patients who already
242 experience structural and systemic barriers healthcare. For this reason, the impact of abortion-
243 restrictive policies on access to other reproductive healthcare is not equally distributed among
244 pregnancy-capable individuals. Populations particularly vulnerable to anti-abortion policies include
245 adolescents, persons with limited financial resources, those who are under or uninsured, and those
246 living in rural areas (Lindheim 1979, Felkey 2014, Reeves 2007, Dobie 1998, Lilja 2021). For these groups,
247 care provided at the time of abortion may be one of the few times routine reproductive healthcare
248 services are obtained. At the systems level, abortion care is often extensively regulated, and delivered
249 through a combination of independent, state and federally funded clinics, which creates a complex
250 health delivery network that is vulnerable to policy shifts that hinder abortion care provision and
251 indirectly affect the concomitant services provided. As abortion care is restricted and abortion providing
252 clinics close, patients that would obtain care at a clinic providing abortion will either forgo services or
253 obtain them elsewhere. Whether the current infrastructure for care delivery is sufficient to meet this
254 shifting demand remains unknown.

255 There are several limitations to this study. We did not consider global differences in abortion care.
256 We conducted this review less than one year following Dobbs. There will likely be forthcoming evidence
257 describing the impact of constrained abortion access on reproductive healthcare.

258 5. Conclusion

259 This review provides important insights into additional needs that reproductive aged persons
260 will face as abortion-providing clinics close and disparity in access to abortion increases. Surprisingly, the
261 impact of policies that restrict or protect abortion access on the provision of contraception, sexually
262 transmitted infection testing and treatment, and cervical cancer provision has not been studied on a
263 national scale. More research is needed to examine the public health impact of constrained abortion
264 access resulting from clinic closures after Dobbs. Attention should be paid to changing trends in
265 contraceptive use, STI rates and cervical cancer in regions where many abortion-providing clinics have
266 closed, thus reducing access to reproductive health services broadly.

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