



Original research article

Evaluating the capacity of California's publicly funded universities to provide medication abortion[☆]



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ABSTRACT

Objective: To explore capacity of University of California (UC) and California State University (CSU) student health centers (SHCs) to provide medication abortion (MA) and SHC staff perspectives on providing MA. **Study design:** SHC staff completed an online survey; we conducted site visits and conference calls with a subset of SHCs. The survey focused on barriers to abortion, resources needed for MA, and potential benefits and challenges.

Results: 11 UCs (100%) and 20 CSUs (87%) completed surveys. All facilities provided basic primary care, including sexual and reproductive health services and some contraceptive services, but not abortion. All sites had adequate staffing and physical plant, but most would require training, access to ultrasound when needed, 24-hour hotlines (CSUs), and back-up care to provide MA.

Conclusion: It would be feasible to provide MA at SHCs, but investment is needed to support staff training, equipment, 24-hour hotlines, back-up care, and minimal security upgrades, in order to implement MA services.

Implications: If SB320 is passed, provision of MA services at student health centers could improve access to early abortion for students in California. This model may be scaled up at other universities around the country.

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1. Introduction

The California State legislature is considering Senate Bill 320, which would mandate the University of California (UC) and California State University (CSU) systems to offer medication abortion (MA) services on campus at student health centers. Three recent trends in particular support efforts to implement the provision of on-campus MA services: higher unintended pregnancy rates among younger women, growing use of MA in the US, and an increasing uptake of MA services within primary care.

Nearly half (45%) of US pregnancies are unintended (2.8 million annually), and approximately 40% end in abortion [1]. The highest

rates of unintended pregnancy occur among women ages 20 to 24, years that often correspond to university attendance. Women¹ ages 18 to 24 obtain 42% of all abortions. According to the 2017 American College Health Association, only 56% of students reported using contraception the last time they had vaginal intercourse [2]. Abortion services are therefore an important health care option for university students.

Although the overall US abortion rate has declined in recent years, the proportion of abortions performed with medication has increased. In 2005, 14% of all nonhospital abortions were performed with medication; by 2014, this proportion more than doubled to 31% [3,4]. MA is an effective, safe, and acceptable method of pregnancy termination for patients who choose it [5,6].

Although most abortions in the US (59%) are performed at abortion clinics, 36% are provided at nonspecialized clinics [3], including primary care or family medicine clinics. At least nine California family medicine

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¹ Some people seeking abortion have different gender identities and may identify as gender nonconforming or transmen.

residency programs offer abortion care training [7]. Qualitative research on patient abortion experiences in family medicine settings shows high satisfaction, and an appreciation of the privacy, convenience, and continuity of care afforded by accessing abortion in one's usual primary care setting [8]. Student health centers (SHCs) represent another primary care site where abortion services could be offered.

Minimal data are available on MA provision on college campuses. In 2006, the University of Illinois at Chicago initiated MA provision. Between October 2006 and April 2009, the on-campus clinic performed 46 MAs [9]. In 2015, two unidentified US colleges reported providing MA [10].

This study explores the capacity of UCs and CSUs to provide MA. We identify gaps in resources required to implement MA provision, with regard to personnel, training, equipment, and supplies, and explore SHC staff perspectives on the benefits and challenges of providing MA.

2. Materials and methods

2.1. Study setting

The UC system includes 11 campuses, including UC Hastings, and roughly 274,000 students [11]. The CSU system includes 23 campuses and roughly 479,000 students [12]. UC students are required to have health insurance, and all but one UC bills to the student health insurance plan, which covers abortion care. CSU students are not required to have insurance; student fees subsidize SHC services and some CSUs bill Family PACT, a state program that provides free family planning services to low-income people. About 10% of CSU students lack health insurance [13], and about 23% are enrolled in California Medicaid (Medi-Cal) [14]. Greater numbers of poor and underrepresented minority students enroll at CSUs compared to UCs [15]. None of the UCs bill Medi-Cal or Family PACT.

2.2. Data collection

From August to November 2017, we invited key informants to participate in a 30-min self-administered online survey. We visited sites or held conference calls with a subset of SHCs who completed the survey; visits included a tour of the facility and in-person interviews with staff. Clinicians, administrators, and counselors who worked at a UC or CSU SHC were eligible to participate. We recorded interviews with participant consent.

2.3. Measures

MA requires little specialized training or equipment. We reviewed the American College of Obstetricians and Gynecologists practice bulletin and the Mifeprex® provider agreement to identify basic requirements for providing MA [16,17]. MA must be provided by or under the supervision of a healthcare provider who is able to: assess pregnancy duration using ultrasound and/or clinical assessment of uterine size, rule out ectopic pregnancy and other contraindications, and provide surgical intervention if needed (including by referral). For this analysis, we defined SHC capacity to provide MA in terms of ability to meet the following eight requirements: 1) have a private exam room with ability to perform pelvic exams when needed²; 2) able to diagnose pregnancy with urine tests and/or pelvic exams; 3) able to perform lab testing (hemoglobin, Rh status, and quantitative serum hCG) on-site or by sending to outside lab; 4) able to date pregnancy; 5) have providers trained in MA provision³ and in counseling; 6) provide after-hours triage, such as a 24-hour nurse- or clinician-staffed telephone hotline; 7) able to perform aspiration or surgical abortion on-site or by referral in case of

incomplete MA or ongoing pregnancy; and 8) able to refer to specialists for management of adverse events as needed (including patients at risk of ectopic pregnancy).

The survey included questions about: barriers to abortion care, resources needed to provide MA, potential benefits and challenges of providing MA on campus, and interest in two alternative models to provide MA at SHCs (telemedicine and traveling clinicians). The survey also asked about clinic volume, service availability, staffing, security, and health insurance.

2.4. Analysis

Using descriptive analyses of quantitative survey data, we examined services currently provided, resources available, and UC and CSU perspectives on providing MA. We coded interviews and open-ended survey questions using thematic content analysis. To assess SHC capacity to provide MA, we compared SHC resources and equipment with the desired and required resources described in Section 2.3, noting the gaps. We conducted quantitative analyses in Stata 14.

UCSF's Institutional Review Board approved this study.

3. Results

Eleven UCs (100%) and 20 CSUs (87%) completed the survey. We conducted site visits or conference calls at four UCs and one CSU; we contacted additional CSUs but they declined due to time constraints or staff availability.

3.1. Current sexual and reproductive health services

All SHCs provided basic reproductive health services (Table 1) and some contraceptive methods. Not all SHCs offered long acting reversible

Table 1

Sexual and reproductive health services currently provided at student health centers (SHCs)

Sexual and reproductive health services	University of California (UCs) (n=11)	California State University (CSUs) (n=20 ^a)
Well woman exam	11	20
Cervical cancer screening/Pap smear	11	20
Sexually transmitted infection testing	11	20
Sexually transmitted infection treatment	11	20
HIV counseling and testing	11	19
Pre-exposure prophylaxis (PrEP) for HIV	11	6
Contraception	11	20
Pregnancy testing and counseling	11	20
Transgender care	11	9
Sexual assault services, on campus	11	20
On-site at SHC	8	16
Miscarriage management care ^b		
On-site	3	1
Referral to local clinics	7	17
Referral to physician's office	5	12
Referral to hospital/urgent care	10	17
Abortion care ^b		
On-site	0	0
Referral to local clinics	5	18
Referral to physician's office	1	6
Referral to hospital/urgent care	5	4
Ultrasound ^b		
On-site	1	0
Referral to local clinics	6	16
Referral to physician's office	8	13
Referral to hospital/urgent care	9	8
Referral to local imaging centers	7	16
Additional counseling if indicated ^c	3	7

^a Three out of 23 CSUs did not participate in the survey.

^b Respondents could select multiple responses for referral.

^c Additional counseling available on-site included general counseling, counseling on STIs, crisis counseling, and contraceptive or pregnancy counseling.

² If telemedicine is used, a laptop with camera, internet connection, and access to a HIPAA-compliant platform is needed.

³ In California, any physician or advanced practice clinician can screen and counsel patients and dispense mifepristone, if trained.

contraception (LARC); among those that did not, all offered contraceptive referral services when a preferred method was unavailable, and 80% reported that they were definitely or maybe interested in providing it on-site (Table 2). None of the SHCs provided abortion, and few provided miscarriage management care or ultrasounds; instead, SHCs typically referred to other facilities for these services (Table 1).

3.2. Capacity to provide MA

All SHCs had adequate physical space and the ability to diagnose pregnancy on-site, and the majority had an on-site pharmacy (Table 3). Most SHCs lacked ultrasound machines and staff trained in ultrasound, although this is not required by ACOG or the FDA for MA provision [16, 17]. All UCs were already equipped with after-hours triage, but most CSUs were not. All SHCs had at least one advanced practice clinician on staff; four UC and four CSU respondents indicated interest or possible interest in being trained in abortion care. Among those unsure about getting trained, one UC provider said: "I prefer to send to someone who has more opportunity to become an expert to perform." Another said: "It's a new idea...for a family physician...I need to think more about actually providing abortion." CSU providers unsure about getting trained were concerned about limited resources and provider buy-in:

I listed 'maybe' as an answer as getting training is not the only step to providing appropriate abortion care. We're a small clinic with limited resources.

We are having difficulty attracting primary care providers to supply basic services. The idea of additional training will need to be discussed with the providers here as to how the services will be delivered, and who would be most appropriately trained.

Common self-reported needs among UCs and CSUs included follow-up care (aspiration services) and back-up care for complications; UCs also mentioned facility security improvements and CSUs highlighted

provider training (Table 4). In open-ended comments, SHCs explained how and why they prioritized these needs:

Our building could not be secured without huge expense, and we do not have the equipment to provide vacuum aspiration if that is needed. We also do not have community physicians to provide after-hours backup that would be needed. (UC).

I fully agree that students need access to convenient and affordable abortion options. However, if we provide medical abortions at the SHC, we will need to increase our staffing, make our building more secure, have security on staff, and provide after-hours care that we do not have in place to deal with complications. All of these issues will increase our budget and the ones who will pay for that increase are the students through an increase to their student services fee. (UC).

One CSU explained: "...we barely have enough staff to cover acute care, much less a complex procedure such as abortion, its monitoring, and follow up." Another CSU mentioned malpractice and liability concerns:

The malpractice coverage for medical providers is a 'self-insured' one, limiting scope of care to ambulatory primary care, and not specialty services, surgery, urgent care or emergency services. The provision of medical abortions would exceed our current coverage limits.

3.3. Interest in alternative models to provide MA

Interest in telemedicine for MA and/or contraception provision was minimal (1 UC, 6 CSUs; not shown in tables), although few were familiar with the model. Two UCs and two CSUs already used telemedicine (for psychiatry, secure messaging, and alcohol and substance use counseling). Several SHCs indicated interest in telemedicine for other services, including specialist consultations (6 UCs, 15 CSUs), tele-dermatology (5 UCs, 13 CSUs), mental health services (5 UCs, 11 CSUs), and

Table 2
Contraceptive methods provided by student health centers

	University of California (UCs) (n=11)		California State University (CSUs) (n=20 ^a)	
	Yes	No	Yes	No
Long acting reversible contraception				
Intrauterine device (IUD) insertion/removal ^b	8	3	8	12
Yes/maybe interested in providing IUDs	2	1	10	2
Implant insertion ^b	9	2	12	8
Yes/maybe interested in providing implants	1	1	7	1
Implant removal ^b	9	2	11	1
Hormonal contraceptive methods ^c	On-site	By prescription	On-site	By prescription
Birth control pills	3	8	14	6
Patch	4	7	9	8
Vaginal Ring	5	6	10	10
Injection	6	5	13	6
Barrier contraceptive methods	On-site	By prescription	On-site	By prescription
Male condoms	11	0	20	0
Female condoms	8	2	15	2
Cervical caps/diaphragm	5	5	7	5
Spermicide	7	2	10	4
Emergency contraception	On-site	By prescription	On-site	By prescription
Emergency contraception (Plan B)	7	4	17	3
Emergency contraception (ella)	5	6	10	6

^a 3 of the 23 CSUs did not participate in the survey.

^b At UCs, IUDs and implants are billed to the student health plan (9 UCs) or paid out of pocket for students who do not have the student health plan (6 UCs). At CSUs, paying for LARC out of pocket (6 CSUs) or with Family PACT (7 CSUs) is the most common option. Two CSUs only bill LARC to other insurance plans, and 1 CSU provides LARC for free (reimbursed through campus fees).

^c For rows that do not sum to 11 or 20 for UCs and CSUs respectively, the remainder did not offer the method.

transgender care (3 UCs, 10 CSUs). Some UCs explained that telemedicine would not help address concerns about providing MA on campus: “We can page the hospital specialists for any needed consults.” One CSU voiced administrative concerns about the model: “I would be very concerned with the logistics of setting something like this up... the credentialing, the insurance requirements...all very difficult in our very bureaucratic system.” Another CSU explained the potential benefits of telemedicine: “Since getting physical spaces built takes so long and our compensation is so non-competitive, telemedicine is a very attractive alternative.”

Regarding the traveling clinician model, about 50% of SHCs were interested or wanted to learn more, and 50% were uninterested. One CSU said:

Very interesting idea...especially if they could provide other services that are beyond our scope: ...IUD and Nexplanon implants...maybe even free GC/Chlamydia testing. We could definitely give them a scheduled space and promote such a service to our patients... but in exchange the traveling person would have to: 1) bring all supplies with them; 2) take away any testing they did with them for processing; 3) it would have to be free to students (or...any kind of 'sign up' with a funding source like Family PACT would have to be done by an onsite assistant...not one of our staff).

Concerns about the model included: ensuring timely care, access to back-up care, and fear of stigmatizing patients if the service is provided on specific days. Two UCs indicated that having a trained provider was not an obstacle to providing MA: “We could provide the clinician to do abortions, but it is the infrastructure to support it that we cannot afford or provide.” Several CSUs were concerned about bureaucratic and liability challenges: “...bringing in another provider would require credentialing, peer review, and involving them in Quality Improvement/Risk management. [For] a revolving person it would [be] almost

impossible...” Another said: “...this clinician...would have to ensure they carry their own liability/professional insurance.”

3.4. Overall SHC perspectives on providing MA

Most respondents did not identify barriers to abortion care. Three UCs and seven CSUs reported barriers for students (not shown in tables), including transportation/accessibility, confidentiality, and lack of knowledge about availability of care. CSUs also mentioned cost, fear of protesters, lack of providers, and lack of family support.

Several UCs highlighted their support for better access, but were concerned that the challenges of providing MA on campus would outweigh the benefits: “The cost...is far greater than the benefit for this number of students...given how easily they can access this service so close to campus.” Other UCs said:

I need to know if there is a real need. We have good access and it's not been a concern....

Since these services are available...and the student health insurance program covers abortion services at 100%, I would not add the complexity and expense of this to the SHC.

If there isn't abortion available nearby, then I would want to have it. But we have a great Planned Parenthood that provides good service. ...This needs to be campus-by-campus.

Most CSUs, particularly those located in low resource areas where students face broad barriers to health care, believed the service was beyond their scope: “We are just able to meet the current primary care demands of our students.”

Table 3

Equipment and services available at student health centers for medication abortion provision

Facility Equipment	University of California (UC) (n=11)	California State University (CSU) (n=20 ^a)
On-site pharmacy	8	19
Private exam room	11	20
Exam table with stirrups to perform pelvic exam as needed	11	19
Speculums for pelvic exams as needed	11	20
Light for performing exams as needed	11	20
Blood pressure cuff	11	19
Equipment for intrauterine device (IUD) insertion	9	9
Sterilization equipment	9	19
Ultrasound machine for pregnancy dating and to rule out ectopic pregnancy ^b	4	2
Vaginal probe transducer for ultrasound	3	3
Electronic health records (n=19)	10	18
Locked doors between waiting room and patient care area	6	9
Lab testing ^c	University of California (UCs) (n=11)	California State University (CSUs) (n=19)
Urine pregnancy testing	11	19
Wet mount of vaginal sample	10	18
Hemoglobin	7	14
Hematocrit	7	13
Serum quantitative hCG	5	6
Rh Factor	4	4
Blood draw to send to outside lab ^d	10	17
Telemedicine equipment	University of California (UCs) (n=11)	California State University (CSUs) (n=20)
Computers with internet	11	20
Video cameras	9	10
Internet access	10	20

^a Three of the 23 CSUs did not participate in the survey.

^b Two UCs and 4 CSUs have at least one staff member trained in ultrasound pregnancy dating.

^c One of the 20 CSU participants did not complete this survey question.

^d The 1 UC that does not send blood draws to an outside lab also does not offer any other blood tests on-site. The 2 CSUs that reported not sending blood draws to an outside lab did report hemoglobin and hematocrit tests on-site, but not serum quantitative hCG or Rh Factor tests.

Table 4
Student health center self-reported needs for implementing medication abortion.

Implementation Needs	University of California (UCs) (n=11)	California State University (CSUs) (n=16 ^a)
Better resources for follow-up care	8	11
Back-up expert advice	8	12
Facility/staffing improvements for security concerns	8	8
Initial training on medication abortion for existing staff	7	14
Ultrasound training for staff	7	10
Hiring additional staff trained in medication abortion	7	10
Values clarification training with staff	7	10
Ongoing training to maintain credentials	6	13
Facility improvements	5	6
Ultrasound machine for dating	5	10

^aOf the total 23 CSU campuses, 20 completed the survey; 4 of the 20 CSUs that participated in the survey did not respond to this question.

4. Discussion

We found that all SHCs either already met the evidence-based requirements to provide MA on campus or could meet them with modest investment. Most SHCs had the physical space required to provide MA and the ability to diagnose pregnancy and counsel about options. Additional support and funding would be required for provider and staff training, lab testing (on-site or by referral), back-up care from local physicians and emergency departments, after-hours support via 24-hour call service (at CSUs), and referral for uterine aspiration in case of incomplete MA. If ultrasound is used, most SHCs will require machines and training; however, ultrasound is not strictly required to perform MA and can be used on an as-needed basis [17–20]. The University of California Family Planning Collaborative (based at five UC campuses) could provide specialist support as needed: evidence suggests that <5% of patients require uterine aspiration or have other complications following MA [20–22].

Beyond these evidence-based requirements, SHCs identified concerns that should be addressable through education about MA. For example, some respondents thought that MA was more complicated than other services they offered but often had little understanding of what the service required. Many thought security upgrades would be needed. While basic security equipment may be prudent, such as a panic button, surveillance cameras, and locked door between the waiting room and patient care area, more extensive upgrades at the SHC are likely unnecessary. The concerns about needing additional liability insurance are valid [23] and will need to be addressed on a campus-by-campus basis if SB320 passes.

Differences in capacity to provide MA do exist across SHCs, with UCs being better prepared than CSUs in part because they require students to have health insurance, have student health insurance plans that cover abortion, and are already set up to bill insurance. In contrast, CSUs offer less specialized care, do not bill for most services, and do not require students to be insured. After-hours triage support, and provider training, as well as the development of systems to bill insurance (including Medi-Cal) will be essential at almost all CSUs. Additionally, many CSUs will require relationships with off-site labs and more robust referral systems to ensure management of complications.

Women face barriers to accessing abortion care in part due to a limited and decreasing number of abortion providers, particularly in rural areas [24]. As a result, many are calling for the integration of early abortion into primary care settings [25,26], which for many students is an on-campus SHC. Studies have shown that women would prefer to receive abortion services at their primary care facility, because they feel connected to the setting, trust their provider, find it more convenient, and seek continuity of care [8,27–30].

Visiting clinician and telemedicine models could assist in MA provision at SHCs, particularly those with limited internal capacity. Telemedicine could support early implementation by facilitating review of ultrasounds and linking family planning specialists to on-site providers. Rigorous evaluation of MA telemedicine provision in Iowa — including data on 20,000 patients over 7 years — found that effectiveness and

safety were just as high as with an in-person visit, and some measures of satisfaction were significantly higher with telemedicine compared with the in-person-visit model [31–33]. Most SHCs have the necessary equipment for telemedicine already, including electronic health record systems, which facilitate remote viewing of ultrasound images and reduce the need to fax charting between sites, and many are interested in the model for a range of services.

Despite its small sample size, this study includes almost all UCs and CSUs. Results may not be generalizable to other states or other institutions of higher learning in California. We did not include objective measures of student demand for abortion. Many SHCs reported low perceived student demand, with metropolitan SHCs reporting minimal barriers to care and remote SHCs reporting a need for more accessible services. Because students may access abortion without ever contacting a SHC, we do not rely on SHC demand estimates. Another analysis estimates that 322–519 UC and CSU students seek MA each month [34]. Most campuses (62%) are further than 30 min by public transit from the closest abortion facilities, which have an average seven-day wait until first appointment [33].

Results from this analysis illuminated SHC reactions to the proposed legislation and highlighted the importance of ensuring that SHCs are informed throughout the legislative process. SHC respondents often thought that MA was more complicated to provide than it truly is, and they may have become more supportive of the bill as they learned what the service would involve. When participating in this study, SHCs were unaware of possible funding to support MA provision. The bill has since been amended to prevent the use of state funds or student fees in implementation; instead, a state fund supported by private donors would cover the implementation costs. SHC concerns about providing MA may be assuaged by this new funding stipulation.

With investments and innovations in service delivery and infrastructure, UC and CSU SHCs would be well equipped to provide MA. Information and education on MA service provision may help to address concerns about integrating the service and providing quality care, while administrative challenges related to adequate staffing in low-resource areas, insurance billing, and professional liability will require additional attention throughout implementation.

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