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## Interest in medication and aspiration abortion training among Colorado nurse practitioners, nurse midwives, and physician assistants

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### Abstract

**Objectives:** We examined advanced practice clinicians' (APCs: nurse practitioners, nurse midwives, physician assistants) interest in training to provide medication and aspiration abortion in Colorado, where abortion provision by APCs is legal.

**Methods:** We surveyed a stratified random sample of APCs, oversampling women's health (CNMs/WHNPs) and rural APCs. We examined prevalence and predictors of interest in abortion training using weighted chi-squared tests.

**Results:** Of 512 participants (21% response), the weighted sample is 50% NPs, 41% PAs, and 9% CNMs/WHNPs; 55% provide primary care. Only 12% are aware they can legally provide abortion. A minority of participants disagree that medication abortion (15%) or aspiration abortion (25%) should be in APC scope of practice. Almost one-third (29%) are interested in medication abortion training and 16% are possibly interested; interest is highest among CNMs/WHNPs (52%) ( $p < 0.01$ ). Interest in aspiration abortion training is 15% with another 11% who are possibly interested; interest is highest among CNMs/WHNPs (34%) ( $p < 0.01$ ). There are no significant differences in abortion training interest by rural practice location or by receipt of abortion education in graduate school. Participants not interested in medication and aspiration abortion training cited abortion being outside their specialty practice scope (44% and 38%, respectively) and religious or personal objections (42% and 34%). Among clinicians interested in medication

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abortion training, 33% believe their clinical facility is likely to allow them to provide this service, compared to 16% for aspiration abortion.

**Conclusions:** Interest in abortion training among Colorado APCs is substantial. However, facility barriers to abortion provision must be addressed in order to increase abortion access with APCs.

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State policies restricting access to abortion have grown exponentially in the last few decades. In 2019 alone, 12 states passed bills that ban abortion completely, set gestational age limits so early that they amount to bans for many seeking care, or ban abortion in certain circumstances (Nash et al., 2019). In states where abortion is restricted and inaccessible, or eventually illegal, women may travel out of state to obtain abortion or self-manage abortion at home (D. G. Foster, 2017). Given that one in four U.S. women will obtain abortion care in her lifetime (Jones & Jerman, 2017), there could be considerable need for abortion providers in states where abortion remains legal.

Advanced practice clinicians (APCs)— nurse practitioners (NPs), certified nurse-midwives (CNMs), and physician assistants (PAs)— are a crucial and growing healthcare workforce in the U.S. (Pohl et al., 2018), particularly in primary and women’s healthcare. APCs can safely perform first-trimester medication and aspiration abortion (Creinin & Grossman, 2014; Kishen & Stedman, 2010; Kopp Kallner et al., 2015; Ngo et al., 2013; Weitz et al., 2013). Considering 89% of abortions in the U.S. occur during the first trimester (Guttmacher Institute, 2016c), expanding the abortion provider workforce to include APCs may increase access to abortion.

Colorado is one of ten states and the District of Columbia that do not have a law restricting abortion provision to physicians (Guttmacher Institute, 2016b). Seventy-three percent of Colorado counties are rural (Enquist, 2016) and 78% of counties do not have an abortion provider (Guttmacher Institute, 2016a). In many rural counties, the number of APCs is similar to or greater than the number of physicians (Colorado Health Institute, 2014), yet prior research has not examined abortion provision interest among rural clinicians. Moreover, Colorado is surrounded by a number of states that may further restrict or eliminate access to abortion in the coming years (Center for Reproductive Rights, 2018), suggesting Colorado may experience an increased need for abortion providers.

In addition to expanding access to abortion care, abortion provision by APCs is cost-effective (Sjöström et al., 2016) and may improve patient satisfaction (Kopp Kallner et al., 2015) and complication management (Battistelli et al., 2018). Abortion provision may also increase job satisfaction (Battistelli et al., 2018) that improves retention (Milt et al., 2011). Yet even in states where abortion provision is legal by APCs, the limited research on their interest in abortion training is now close to fifteen years old and occurred within five years of FDA approval of mifepristone for medication abortion (U.S. Food & Drug Administration, 2018). In 2005, 25% of surveyed APCs in California were interested in medication abortion training (Hwang et al., 2005). However, interest in aspiration abortion was not assessed. Another study found with over one-quarter of APC students planned to provide medication abortion and over 15% planned to provide surgical abortion (Shotorbani et al., 2004).

We surveyed a stratified random sample of Colorado's licensed and practicing APCs. In this paper, we examine their interest in medication and aspiration abortion training, characteristics associated with interest, and reasons why they are not interested in abortion training.

## Materials and Methods

### Sample and procedures

We obtained names, addresses, license types, and specialty certifications (for NPs only) for all registered APCs in Colorado through the Colorado Division of Regulatory Agencies (DORA) public database in April 2018. After excluding those with inactive licenses, addresses outside Colorado, and NPs whose sole specialty certification was geriatrics, psychiatric/mental health, or neonatal, the target population was 7,295 APCs; 50.2% NPs (i.e., family, adult-geriatric, pediatric, or "other" specialty certification), 41.0% PAs, and 8.8% CNMs and women's health nurse practitioners (WHNPs).

We stratified by provider type (NP, CNM/WHNP, PA), oversampling CNMs and WHNPs because they are more likely than other APCs to be interested in providing abortion (Hwang et al., 2005), yet they make up a smaller proportion of APCs. We also stratified by zip code, oversampling APCs residing in rural or frontier counties as designated by the Colorado State Office of Rural Health (Enquist, 2016) because rural areas often lack access to abortion care (O'Donnell et al., 2018). Given the target population, we oversampled CNMs/WHNPs to 22% of the sample and rural clinicians to 25%; thus the target populations of CNMs/WHNPs and rural clinicians were included in the sampling frame. For individuals listed within each of the six strata (three provider types by rural/urban location), we generated random numbers between one and the total number of clinicians on that list.

Power calculations were based on differences in outcomes between women's health clinicians (CNMs/WHNPs) and NPs and PAs. We anticipated 24% of NPs and PAs and 42% of CNMs/WHNPs would be interested in providing abortions (Hwang et al., 2005). A sample size of 350 would provide 95% power with an alpha of 0.05 to detect this difference. We designed the sample to represent 10% of currently practicing APCs in Colorado (N=730). We originally anticipated a 50% response rate and included 1,460 APCs. After a response rate of 16.9% after two rounds of mailing, we doubled our sample to include 2,920 clinicians (or 40% of the target population), with strata calculated on oversampling.

DORA does not release email addresses so we mailed a paper letter explaining the study purpose and containing a secure individual link to the survey through Research Electronic Data Capture (REDCap), an electronic data capture tool hosted at the authors' university (Harris et al., 2009). We sent an additional postcard containing a QR code for the survey link. Inclusion criteria included having practiced clinically in Colorado in the last six months. Data were collected between June 2018 and June 2019. Participants agreed to a consent form at the beginning of the survey. REDCap identified who completed the survey, but names were not connected to survey responses. Of 570 responses, 5.6% did not qualify. Assuming the same proportion in those who did not respond (Harper et al., 2013) and after excluding returned mail and those with updated out of state addresses, the response rate is

21.1%. Response rates ranged from 15% among urban PAs to 25% among urban CNMs/WHNPs. A total of 512 participants completed the survey, representing 7% of licensed APCs in Colorado. Surveys were completed in REDCap (Harris et al., 2009). Participants received a \$10 e-gift card upon survey completion. The authors' Institutional Review Board approved the study.

## Measures

We included questions previously used in surveys with reproductive healthcare clinicians (Dodge et al., 2013; Hwang et al., 2005; McLemore et al., Unpublished results; Shotorbani et al., 2004). Survey questions were reviewed by a group of reproductive health clinicians and researchers and piloted tested with six APCs.

Our outcome variables included: (1) Interest in receiving training to provide medication abortion, defined as “the use of medications to induce abortion or terminate an early pregnancy,” and (2) vacuum aspiration abortion, defined as “using a manual or electric vacuum to remove tissue from the uterus. Procedural skills needed are similar to an IUD insertion or endometrial biopsy” (McLemore et al., Unpublished results). Categories included “yes,” “no,” and “might be.” For bivariate analyses, we dichotomized the variable to “yes” versus “might be” or “no.” Participants not interested in training were asked to choose all the reasons they are not interested in training. After combining categories with small Ns, the final categories were: (1) Patients do not need abortion/not in scope of specialty; (2) religious or personal objections to abortion; (3) clinical facility would not permit; (4) does not want to, uncomfortable, or unsure why not; (5) legal, scope of practice, or malpractice concerns; (6) lack of support from friends, family, community, or colleagues; (7) no physician consult available; and (8) fear of antiabortion harassment. Participants who were interested or possibly interested in abortion training were asked how likely it is that their current practice facility would allow them to provide care on a 5-point Likert scale from “very likely” to “very unlikely.”

Covariates included gender (male, female, transgender, other), provider type (NP, CNM/WHNP, PA), and religious affiliated facility (yes/no). Clinical practice type included family practice, internal medicine, pediatrics, women's health, specialty or sub-specialty care, acute care (inpatient hospital care), urgent/emergent care, other. We classified “other” into the best fit category. Those who chose more than one practice type were classified by the practice most likely to provide reproductive healthcare. Years in APC practice was classified as <5, 5–10, or >10. Participants provided the zip code, county, or region for their primary practice location, which was used to create a variable specifying a rural practice location (yes/no). We created a variable for having received didactic or clinical training on medication abortion (abortion induced by medications), early surgical abortion (aspiration or dilation and curettage [D&C] using manual or vacuum suction to remove uterine tissue early in pregnancy), or surgical abortion (dilation and evacuation [D&E] using suction and instruments to remove uterine tissue later in pregnancy) in graduate school; “unsure” was coded as “no” (Dodge et al., 2013). We assessed current reproductive health practices by asking what proportion of clinical time the participant spends providing care to people of reproductive age (i.e., 13–45 years old) (1–33%, 33–66%, and 67–100%) (Hwang et al.,

2005). Participants were asked if they personally provided pregnancy options counseling on all three options and provided medication abortion (abortion reasons, such as therapeutic or miscarriage management were not specified). Participants were given a list of abortion laws and instructed to “indicate whether the following laws and regulations are present in Colorado, as well as how sure you are.” In this analysis, we include responses to the statement, “Abortions must be performed by a licensed physician (MD or DO)” (Dodge et al., 2013). “No, I am very sure” and “No, I am somewhat sure” were coded as correct. We captured abortion attitudes by asking if abortion should be legal in all circumstances, legal in some circumstances, or illegal in all circumstances (Hwang et al., 2005; Shotorbani et al., 2004). We asked participants to respond to two statements that were followed by definitions of medication and aspiration abortion: “It should be in the scope of practice for NPs, CNMs, and PAs with training and competency to provide MEDICATION [ASPIRATION] abortion for their patients (agree, disagree, unsure).”

## Analysis

Following Lumley (2011), survey weights were created to account for the stratified sampling (three provider types by rural/urban location) and to adjust for non-response within these strata. Statistical analyses were conducted using the survey R package (Lumley, 2004) and Stata 13 (StataCorp, 2013) survey commands. Unweighted frequencies were calculated along with weighted percentages for characteristics of the full sample and by provider type. Weighted chi-squared tests were used to examine differences between sample characteristics and clinician type, and sample characteristics and interest in abortion training. Among those who were not interested in abortion training, we calculated the percentage who agreed with each reason for disinterest. Finally, among those who were interested or possibly interested in training, we calculated the perceived likelihood of their current practice allowing them to provide abortion.

## Results

### Sample characteristics

The unweighted sample includes 512 participants: 226 NPs (44.1%), 141 CNMs/WHNPs (27.5%), and 145 PAs (28.3%); 20.5% rural clinicians. After applying survey weights, the weighted sample consists of 257 NPs (50.2%), 45 CNMs/WHNPs (8.8%), and 210 PAs (41.1%), with 8.6% rural clinicians; these proportions are almost identical to those in the target population. The weighted sample is majority female and no participants selected transgender or “other” gender (Table 1). Fifty-five percent of the sample provides primary or women’s healthcare. Over one-third of the sample and 53% of CNMs/WHNPs have ten or more years in APC practice. Less than half (46%) of participants received training on abortion during graduate school; only 26% of NPs received abortion training compared to 55% of CNMs/WHNPs and 68% of PAs. Approximately 11% of NPs and PAs and 82% of CNM/WHNPs reported that two-thirds or more of their clinical time is spent caring for people of reproductive age.

Half the sample and 92% of CNMs/WHNPs provide pregnancy options counseling. Six percent of the sample, 26% of CNMs/WHNP, provides medication abortion. The majority

(58%) of the sample believes that abortion should be legal in all circumstances and 33% believe abortion should be legal in certain circumstances, with no significant differences by provider type.

Only 12% of the sample, but 36% of CNMs/WHNPs, are aware they can legally provide abortion. Less than 15% of the sample disagree that medication abortion and 25% disagree aspiration abortion should be in the APC scope of practice, with no significant differences by provider type. Almost one-third (29%) of the sample, and 52% CNMs/WHNPs expressed interest in medication abortion training. Another 16% of the sample are possibly interested. Fifteen percent of the sample, and 34% of CNMs/WHNPs, expressed interest in aspiration abortion training. Another 11% of the sample is possibly interested. All participants who are interested or possibly interested in aspiration abortion training are also interested or possibly interested in medication abortion training.

### Interest in abortion training

Among participants interested in medication abortion (Table 2), significantly higher proportions are CNMs/WHNPs (52%), work in women's health (51%) or urgent/emergency care (42%), have 5–10 years of professional experience (36%), spend more than two-thirds of their time caring for reproductive age people (43%), provide pregnancy options counseling (41%), provide medication abortion for any reason (60%), believe abortion should be legal in all circumstances (43%), are aware that Colorado does not require abortions to be performed by a physician (49%), and believe that medication and aspiration abortion should be in their scope of practice (37% and 41%, respectively). Among those interested in medication abortion, there are no significant differences by gender, religious affiliation of facility, practice location, or receipt of abortion education (all p-values >0.05). Significantly higher proportions of participants interested in aspiration abortion are participants who are CNMs/WHNPs (34%), work in women's health (35%), have practiced for less than five years (22%), spend more than two-thirds of their time caring for reproductive age people (23%), provide medication abortion for any reason (18%), believe abortion should be legal in all circumstances (23%), are aware the Colorado does not require abortions to be performed by a physician (30%), and believe that medication and aspiration abortion should be in their scope of practice (18% and 23%, respectively). Among those interested in aspiration abortion, there are no significant differences by gender, religious affiliation of facility, practice location, receipt of abortion education, or provision of pregnancy options counseling or medication abortion (all p-values >0.05).

The most frequently reported reasons participants are not interested in medication and aspiration abortion training are that their patients do not need abortion services or abortion is out of their specialty practice scope (44% and 38%, respectively), followed by religious or personal objections to abortion (42% and 34%), and that their clinical facility would not permit abortions (21% and 28%) (Figure 1). Among participants who are interested or possibly interested in medication abortion but not in aspiration abortion, clinical facility barriers are the most frequently reported reason (48%), followed by legal, scope of practice, or malpractice concerns (22%) and patients not needing abortion services (22%).

There are no significant differences among reasons for disinterest by provider type, with the exception that PAs and CNMs/WHNPs were more likely than NPs to report having no physician consult available as a reason for not being interested in aspiration abortion training (11%, 11%, 4%, respectively) (not shown).

Among clinicians interested or possibly interested in medication abortion training, 33% believe their clinical facility is likely to allow them to provide medication abortion. Among those interested or possibly interested in aspiration abortion training, only 16% believe their clinical facility is likely to allow them to provide aspiration abortion (Figure 2).

## Discussion

As states continue to restrict or eliminate access to abortion, there may be a greater need for abortion providers to ensure abortion is accessible in states where it remains legal. Our stratified random survey of practicing APCs in Colorado, where it is legal for them to provide abortion, suggests that although most APCs are not providing and are not aware they can legally provide abortion, there is substantial interest in abortion training. However, abortion training interest does not guarantee the ability to provide abortion, and participants reported a number of facility barriers that must be addressed in order to increase access to abortion services with APCs.

We found substantial interest in medication and aspiration abortion provision among our sample. Close to one-third of participants are interested and 15% are possibly interested in medication abortion training, which is higher than interest found in a survey of California APCs shortly after the FDA approved mifepristone for medication abortion (Hwang et al., 2005). Our study was conducted during a time of frequent media attention on increasing abortion restrictions, and abortion interest could reflect mobilization of APCs interested in protecting abortion rights or reflect that medication abortion is a more established practice than it was in 2005 (U.S. Food & Drug Administration, 2018).

Addressing the dearth of research on APC interest in aspiration abortion training, we found that one-quarter of participants are interested or possibly interested in aspiration abortion training. Unlike medication abortion, aspiration abortion requires specific instruments and is a procedure that must be performed frequently enough to maintain competence, so it is not surprising that twice as many participants are interested in training to provide medication than aspiration abortion. We also found that participants interested in medication abortion training were not interested in aspiration abortion training largely due to clinical facility barriers; the most frequently reported reason was that their clinical facility would not allow it. Anticipated clinical facility barriers, along with greater interest in medication abortion training, suggest that provision of medication abortion is likely the first step to expanding abortion access outside of family planning specialty facilities.

Although abortion attitudes were a strong predictor of interest in abortion training, as seen in prior literature (Hwang et al., 2005; Shotorbani et al., 2004), the most frequently reported reason participants are not interested in abortion training was that they perceive their patients do not need abortion services or abortion is outside their specialty scope. Indeed, one-third



of the sample provide non-women's health specialty care, such as orthopedics, where abortion is not performed. Although participants currently working in women's health have the highest interest in abortion training, abortion services can be provided in primary care (Leeman et al., 2007; Wu et al., 2015), and clinicians working in non-women's health specialties such as orthopedics could choose to provide abortion services outside their primary place of employment— but only if they are aware it is legal. Only 12% of the sample is aware they can legally provide abortion and only 6% of participants reported currently providing medication abortion— including those who may only provide it for miscarriage management. Thus, most Colorado APCs and clinical administrators are likely not aware abortion provision by APCs is legal.

The majority of participants interested in abortion training perceive that their clinical facility will not allow them to provide abortion care. Similarly, 58% of California APCs interested in medication abortion reported their clinical facility as a barrier to provision (Hwang et al., 2005) and clinic policies were a barrier commonly described by OBGYNs trained to provide abortion (Freedman et al., 2010). In the present study, participants not interested in abortion training also reported a number of facility-level reasons for disinterest, in addition to perceiving their patients not needing abortion services and religious or personal objections to abortion. Over 20% were not interested in training because they believed their facility would not permit them to provide abortion. Facilities would likely need to make substantial changes to offer abortion, including improvements to security and administrative or physical separation of abortion services as federal funding cannot cover abortion (Raifman et al., 2018). Participants also reported legal, scope of practice, or malpractice concerns and unavailability of physician consult. These concerns are founded; even in states without a law limiting abortion provision to physicians, there can be scope of practice, regulatory, or credentialing barriers (Weitz et al., 2009). And facilities and clinicians face challenges obtaining malpractice insurance that covers abortion (Dehlendorf & Grumbach, 2008; Yanow, 2013). Concerns with availability of physician or specialized abortion provider consult and referral for complication management have also been reported by health center staff who do not currently offer abortion services (Raifman et al., 2018), although this may be an easier barrier to address through collaboration with specialized family planning facilities. In sum, training APCs to provide abortion will not substantially expand access if healthcare facilities are not willing or do not have the resources to address these barriers.

We advance the limited data on APCs' perspectives of abortion provision and scope of practice. Similar to a study with APC students (Shotorbani et al., 2004) and despite variation in abortion attitudes and that few participants are aware abortion provision by APCs is legal, only a minority of participants do not agree medication or aspiration abortion should be within the APC scope of practice. Scope of practice is determined, in part, by professional organizations and professionals themselves. Thus, these results, professional organizations' recognizing abortion as within the APC scope of practice (American College of Nurse-Midwives, 2018; American College of Obstetricians and Gynecologists, 2014; American Public Health Association, 2011) and the fact that APCs already provide medication and aspiration abortion safely and effectively in multiple states (Weitz et al., 2009, 2014), are promising for advocates working on legal challenges to physician-only laws in other states. Although supporting abortion as within their scope of practice did not differ by provider

type and NPs and PAs had similar interest in abortion provision, scope of practice varies among NPs, CNMs, and PAs. NPs and CNMs practice independently in the state of Colorado whereas PAs have a supervising physician. This difference might help explain why PAs were more concerned with a lack of physician consult than NPs, although it is interesting that CNMs had similar concerns as PAs. More research is needed on barriers to abortion provision by provider type and state regulation of scope of practice.

Experts have suggested abortion provision in primary care, particularly in rural areas, may expand access (Leeman et al., 2007; Yanow, 2013). Our data suggest there is APC capacity to provide abortion in rural areas in Colorado as we found no significant difference in interest in abortion provision between urban and rural clinicians. Surprisingly, urgent/emergency care clinicians had greater interest in abortion training than family, internal medicine, and pediatric clinicians. In rural areas where there are no specialized family planning clinicians and where primary care may be difficult to access, abortion provision by urgent/emergent care clinicians may be a promising area of exploration. At a minimum, urgent/emergent care clinicians in rural areas may be able to assist women choosing self-managed abortion, which occurs in the U.S. and may increase as state abortion laws become more restrictive (Aiken et al., 2018; D. G. Foster, 2017; Fuentes et al., 2020).

The majority of participants did not report receiving clinical or didactic education on abortion during graduate school. Our results align with A. Foster and colleagues' (2006) findings that less than half of accredited APC programs in the U.S. contained clinical or didactic education on abortion. This lack of abortion education is concerning because abortion care is common and necessary healthcare and nursing educational content standards are used, in part, to determine scope of practice. Abortion education was not significantly associated with interest in abortion training, perhaps because students do not choose their curricula. However, abortion education in clinical training programs that includes evidence-based information about abortion and values clarification may improve professionalism and patient-centered care for any APC who cares for reproductive age people (Steinauer et al., 2014). Future research could prospectively examine abortion practice trajectories when APC programs introduce abortion to their curricula.

Although we conducted a stratified random survey, participants with greater interest in reproductive health likely responded to the survey, so interest in abortion provision may be higher in our sample than the Colorado APC population. Our response rate is slightly lower than prior healthcare provider surveys. However, most studies used convenience sampling (Shotorbani et al., 2004) or national probability samples such as Verispan or the AMA Masterfile (Desai et al., 2018; Harper et al., 2013), in which sample contact information is consistently updated. We have a comparable sample size to many of these studies (Dodge et al., 2013; Harper et al., 2013; Shotorbani et al., 2004) and our response rate is similar to a random survey of California nurses (McLemore et al., Unpublished results). DORA only requires APCs to update their addresses every two years, thus it is likely that many APCs did not receive the survey invitation. Results did not change substantially between the initial and follow-up survey invitations, suggesting that a larger response rate would not substantially change the results. In the survey, questions on current abortion provision did not specify "therapeutic/elective" and the questions came directly after asking about spontaneous

abortion management, thus it is likely that some participants who report providing abortion do so only for spontaneous abortion management. This prohibits us from assessing the prevalence of participants who provide “therapeutic/elective” medication abortion and may account for the lack of a significant difference between interest in aspiration abortion training and personal provision of medication abortion. Finally, we did not inquire about training on induction termination. Since CNMs attend births by induction, more research is needed on their role in induction termination. Despite these limitations, we contribute needed data on APC interest in aspiration abortion, as well as abortion interest among rural APCs and those practicing outside of women’s healthcare.

### Implications for Practice

Study results suggest there is substantial interest in abortion training among APCs in Colorado, including among primary and urgent/emergent care and rural clinicians. The next step to expanding access to abortion care with APCs is to identify and reduce facility barriers to abortion provision and design training programs for APCs. Training programs should incorporate abortion care into their curricula to start a pipeline of trained APCs and to ensure people considering abortion receive non-judgmental, evidence-based counseling and care.

### Conclusions

Our results documenting APC support for abortion as within their scope of practice and interest in abortion training may be helpful for policymakers working to change state policies that currently prohibit APCs from providing abortion care. Greater APC interest in medication abortion than aspiration abortion training and fewer reported facility barriers for medication abortion suggest expansion of medication abortion is more feasible than aspiration abortion. Future research is needed to explore how urgent/emergent care APCs can help expand access to abortion care, whether by providing direct services or assisting women with self-managed abortion. Facility barriers must be addressed in order to expand abortion services with APCs.

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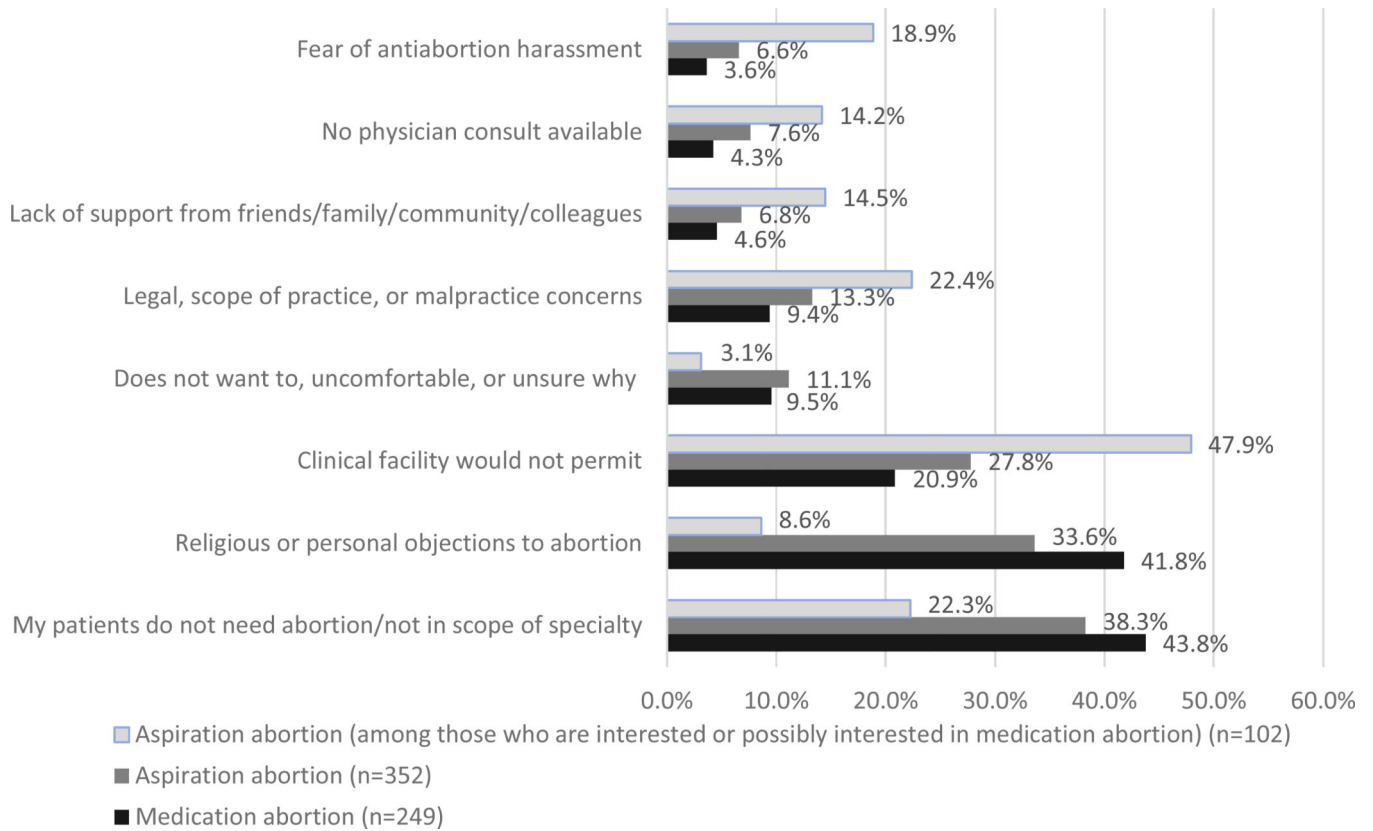
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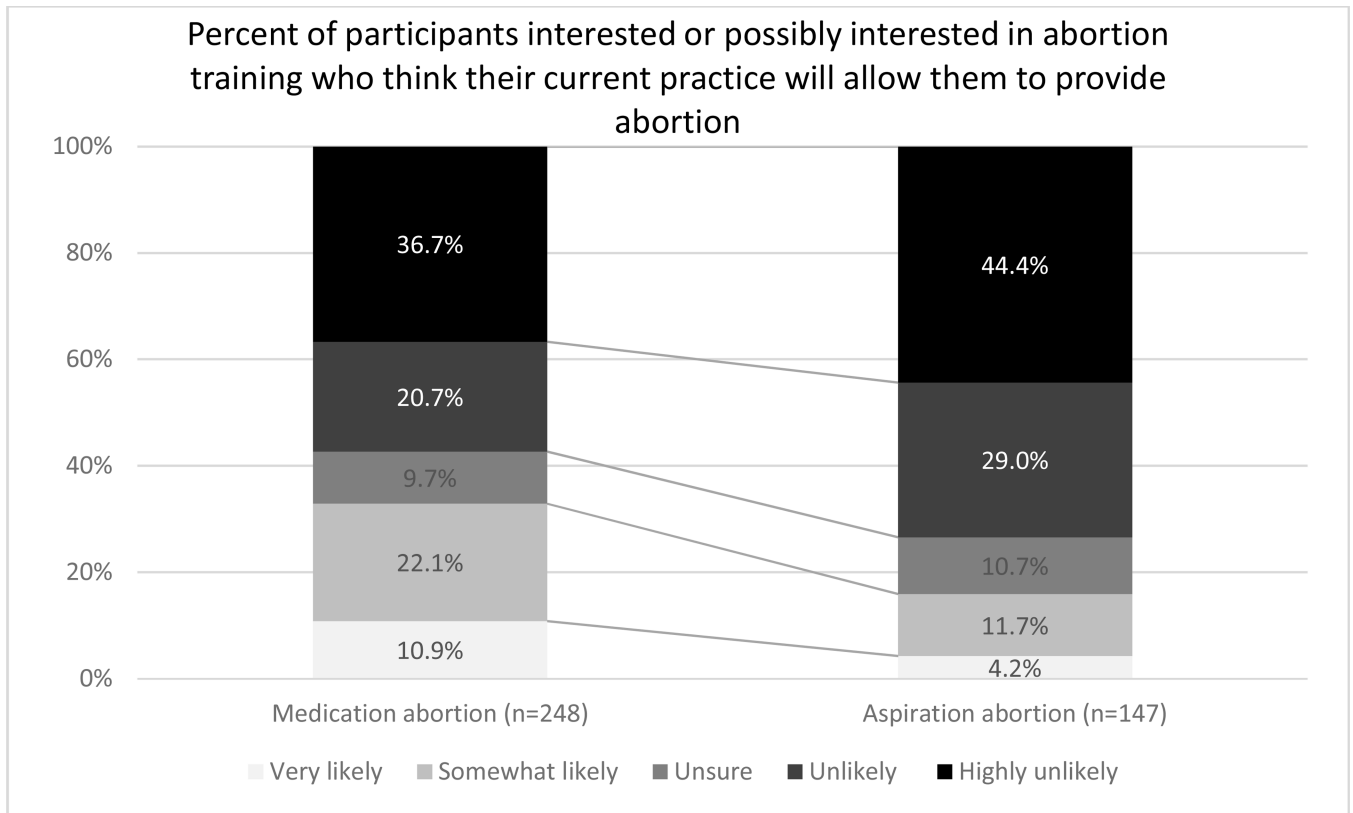
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**Figure 1.** Reasons APCs are not interested in abortion training. Participants could select more than one answer so percentages do not add up to 100%. The figure presents reasons APCs are not interested in medication abortion training (black lines), aspiration abortion training (dark gray lines), and aspiration abortion among those interested or possibly interested in medication abortion training).



**Figure 2.** Percent of participants interested or possibly interested in abortion training who think their current practice will allow them to provide abortion. Each stack in the bar graph represents a 5-point Likert scale from highly unlikely (black) to very likely (light gray).



**Table 1:**

Sample characteristics for the full sample (unweighted n, N=512)) and stratified by provider type (weighted %, calculated column-wise) (p-values from weighted Chi-squared tests).

Variable	Total Sample	Total Sample	NP	CNM/WHNP	PA	p-value
	n	%	%	%	%	
Female gender	449	84.7	88.3	100.0	77.0	<0.001
Practice type						
Women's health	151	12.0	5.5	96.5	2.0	<0.001
Family	133	29.4	32.9	0.0	31.2	
Other (non-women's health specialty)	53	13.4	17.8	0.0	10.9	
Urgent/emergent care	57	15.0	12.5	0.0	21.4	
Internal medicine/Pediatrics	118	30.2	31.4	3.5	34.5	
Years in practice						
<5	145	30.1	35.7	22.7	24.9	0.038
5–10	150	31.7	29.9	24.1	35.4	
>10	215	38.2	34.4	53.2	39.7	
Rural practice location	105	8.6	7.8	9.7	9.4	<0.001
Works at a religiously affiliated facility	51	10.6	9.4	10.7	12.1	0.587
Received training on abortion in graduate school	235	45.8	26.1	55.3	68.0	<0.001
% of time spent caring for reproductive age people						<0.001
None	37	9.2	10.9	0.7	8.9	
1%–32% *	140	34.1	37.9	5.7	35.4	
33–66%	176	39.2	39.6	11.5	44.5	
67–100%	158	17.6	11.6	82.1	11.3	
Provides pregnancy options counseling	308	50.5	45.6	92.2	47.6	<0.001
Provides medication abortion	50	5.9	0.7	26.4	7.9	<0.001
"I think abortion should be":						0.099
Legal under all circumstances	316	58.0	61.1	69.9	51.7	
Legal only under certain circumstances	157	32.5	30.6	26.6	36.0	
Illegal under all circumstances	37	9.6	8.4	3.6	12.3	
Aware that Colorado does not require abortions to be performed by a physician	88	12.2	12.0	36.3	7.2	<0.001
Medication abortion should be in APC scope of practice						0.203
Agree	403	75.3	76.8	86.5	71.1	
Disagree	65	14.8	14.3	10.0	16.4	
Unsure	43	9.9	8.9	3.6	12.5	
Aspiration abortion should be in APC scope of practice						0.162
Agree	306	57.8	62.1	64.2	51.3	
Disagree	117	25.2	23.3	19.3	28.8	
Unsure	86	17.0	14.6	16.5	19.9	
Interested in training to provide medication abortion						0.012
Yes	179	29.4	28.5	51.8	25.8	

Variable	Total Sample	Total Sample	NP	CNM/WHNP	PA	p-value
	n	%	%	%	%	
Possibly	83	15.8	15.2	18.5	15.9	0.002
No	249	54.8	56.3	29.7	58.3	
Interested in training to provide aspiration abortion						
Yes	99	14.5	14.2	34.1	10.8	
Possibly	61	11.1	8.9	12.8	13.5	
No	352	74.4	77.0	53.1	75.7	

\* Category appeared as 1–33% in the survey.

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**Table 2:**

Weighted characteristics of participants interested in medication or aspiration abortion training (p-values from weighted Chi-squared tests).

Variable	Medication Abortion		Aspiration Abortion	
	%	$\chi^2$ p-value	%	$\chi^2$ p-value
Gender		0.073		0.864
Female	31.3		14.5	
Male	18.5		13.5	
Provider type		0.005		0.001
NP	28.5		14.2	
CNM/WHNP	51.8		34.1	
PA	25.8		10.8	
Practice type		<0.001		<0.001
Women's health	50.5		35.0	
Family	28.1		7.0	
Internal medicine/Pediatrics	27.9		19.3	
Urgent/emergent care	42.1		19.9	
Other (acute, non-women's health specialty)	16.7		8.9	
Years in practice		0.032		0.002
<5	31.6		21.6	
5–10	36.3		16.5	
>10	22.0		7.2	
Works at a religiously affiliated facility		0.716		0.376
Yes	27.4		10.0	
No	30.3		15.4	
Practice location		0.118		0.174
Urban	28.7		14.1	
Rural	36.8		19.5	
Received training on abortion in graduate school		0.744		0.583
Yes	30.3		13.5	
No	28.7		15.4	
Percent of time spent caring for reproductive age people		<0.001		0.005
None	0.9		0.9	
1%–32%*	26.5		12.6	
33–66%	32.6		15.5	
67–100%	43.1		23.2	
Provides pregnancy options counseling		<0.001		0.192
Yes	40.6		16.6	
No	17.7		12.0	
Provides medication abortion		<0.001		0.471
Yes	60.1		17.9	
No	27.6		14.4	

Variable	Medication Abortion		Aspiration Abortion	
	%	$\chi^2$ p-value	%	$\chi^2$ p-value
Position on legal status of abortion		<0.001		<0.001
Legal under all circumstances	43.1		23.3	
Legal only under certain circumstances	13.5		3.1	
Illegal under all circumstances	0.0		0.0	
Aware that Colorado does not require abortions to be performed by a physician		0.001		<0.001
Yes	48.7		30.0	
No	26.7		12.3	
Medication abortion should be in APC scope of practice		<0.001		0.016
Agree	37.2		18.0	
Disagree	4.3		4.3	
Unsure	7.6		3.8	
Aspiration abortion should be in APC scope of practice		<0.001		<0.001
Agree	41.3		22.8	
Disagree	9.8		1.4	
Unsure	18.3		6.1	

\* Category appeared as 1–33% in the survey.

Note: Percentages were calculated row-wise for a binary “interested” in abortion training vs. “possibly” or “not interested.”