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Roundtable in Ob/Gyn & Women's Health

Medical Education in Abortion

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The Roundtable Question

What is the current state of abortion education and training in the United States? Should medical schools offer abortion education and training to students and residents? These questions were posed to a panel of experts, who consider the ramifications of a medical curriculum that fails to prepare practitioners to provide a full range of reproductive health services to the populations they serve. Obstetrician-gynecologists who provide abortions are in the minority, despite increasing demand for these services.[1] This expert panel explores how we arrived at the current shortage of abortion providers, what can be done to reverse this situation, and why education and training in abortion is important even for healthcare practitioners who subsequently choose not to offer this service in clinical practice.

Monica V. Dragoman, MD, MPH

Abortion is an essential component of comprehensive reproductive healthcare. Each year, nearly half of all pregnancies are unintended, and half of those unintended pregnancies are terminated.[1] Abortion is one of the most common surgical procedures provided to women of reproductive age -- more common than hysterectomy, sterilization, and cesarean delivery. By the age of 45 years, an estimated 1 in 3 women will have had an abortion.[2]

Despite demand for abortion services, numerous barriers limit access to this procedure. Not only must women contend with legal, financial, and social restrictions affecting availability of abortion care, but they may also struggle to find a physician willing and able to perform a safe abortion. Over the past 2 decades, fewer and fewer physicians report offering first and second trimester pregnancy terminations. Between 1996 and 2005, the number of physicians performing abortions declined by 13%.[3] More than 30% of women living across 87% of counties in the United States have no abortion provider.[2]

One reason for the diminished reserve of abortion providers is limited exposure during medical school and residency. A recent study found that 17% of medical school educators provide no formal abortion education in the preclinical and clinical years, and only 32% of schools integrated at least 1 lecture about abortion into their clinical rotations.[4] In response to concerns over incomplete family planning and abortion training in obstetrics and gynecology residency programs, in 1996 the Accreditation Council for Graduate Medical Education (ACGME) mandated that abortion training be included as a requirement of this residency.[5] This requirement is endorsed by the American Congress of Obstetricians and Gynecologists (ACOG).[6] To accommodate institutional policies, some programs divert residents to nonhospital sites for experience in performing abortions. Residents also have the right to opt out of training for personal or religious reasons, but all residents must learn about the management of abortion complications. Although no formal mandates require abortion training in other disciplines, 26 family medicine resident training programs across the United States have integrated family planning education into their trainee curricula; the first such program was initiated in 2004.

Following the institution of these standards, 51% of programs report routine abortion training for residents; 39% provide optional training, and 10% still offer no training at all.[7] Residents are more likely to participate in abortion training when it is part of the standard curriculum, rather than offered as an elective.[8] Although training models vary significantly, a national survey conducted in 2002 revealed that residents graduating after the ACGME policy change were more likely to offer abortion services after their residencies compared with colleagues who graduated before 1996.[9] The likelihood that a practitioner will offer abortions in practice is strongly correlated with his or her experience in performing abortions as a resident, and this likelihood increases with increasing numbers of abortions performed during residency.[9]

Some people in the public arena oppose resident training in abortion. Recent legislation has been proposed to deny public funding to graduate medical institutions that provide these training opportunities. Initiatives to restrict physician access to medical knowledge set a dangerous precedent. They also interfere with the ability of trainees to become well-rounded physicians capable of attending to the health needs of the entire population. Additionally, concerns have been raised about mandatory abortion training; however, no resident is ever forced to participate in abortion care that conflicts with his or her conscience.

Reflecting on their training, physicians and residents perceive many benefits from participating in abortion care. Not only do they feel more proficient with procedural and nonprocedural aspects of abortion, these residents also are better able to meet the needs of women who require uterine evacuation for other indications, including management of early pregnancy failure, which affects 15%-25% of pregnancies.[10,11] Furthermore, abortion training contributes to greater competence and confidence with a wide range of basic gynecologic skills, including assessing uterine size and position and performing endometrial biopsies.[12,13]

I am very optimistic about the future of abortion training in the United States. A recent survey of obstetrician-gynecologists demonstrated that the youngest generation of physicians (22% of those ages 35 years and younger) are more likely to provide abortions than older physicians (12% of those ages 36-45 years) in practice.[1] Over time, increasing numbers of residency programs have adopted formalized abortion training in step with premier academic institutions around the United States. Moreover, postgraduate fellowship programs in family planning for both obstetrician-gynecologists and family medicine physicians support specialization in this area and contribute to a pool of committed clinicians and academicians to train future physicians. In my own experience, some of the best and brightest candidates for residency demand integrated abortion training and gravitate toward programs that will facilitate their evolution into high-quality reproductive healthcare providers. They recognize that abortion is an essential component of comprehensive reproductive healthcare.

Jody E. Steinauer, MD, MAS

Abortion training is critical to ensure that an adequate number of clinicians have the skills necessary to meet the needs of the 1.2 million US women who have abortions each year.[3] My comments will focus on training and practice of obstetrician-gynecologists, but they are relevant to other physician specialties and advanced practice clinicians who have important roles in ensuring access to abortion. Family practice physicians have particular relevance, because they have procedural and reproductive health training, care for women across the life span, and often practice in areas with limited access to medical services. In recognition of the potential for family medicine physicians to improve access to abortions, increasing attention has been paid to the training of family physicians to provide this care.[14-16]

However, abortion training alone does not guarantee the future provision of abortion services. Obstetrician-gynecologists are more likely to integrate abortion into their practices when they start their residencies with the intention to do abortions and when they are exposed to abortion training during residency.[9] Once in practice, obstacles, such as hospital policy restrictions on abortion services and location in a rural setting, are associated with reduced likelihood of integrating abortion into clinical practice.[9] To increase access to abortion care, it is important to ensure that obstetrics-gynecology residents are exposed to training, to motivate medical students to care about abortion before residency, and to support newly licensed physicians to overcome professional obstacles to providing abortion.

In my first year of medical school in 1992, I was inspired to work with dozens of medical students to create an organization called Medical Students for Choice (MSFC). We were frustrated by what we perceived to be the omission of abortion training from most undergraduate and graduate medical education, and we advocated for its inclusion. In fact, in 1992, the lowest rate of abortion training (12%) since the procedure was legalized was documented.[8] Routine training has steadily increased since the ACGME mandated abortion training in 1995 and the Kenneth J. Ryan Residency Training Program in Abortion and Family Planning (Ryan Program), founded in 1999, began providing technical assistance to programs to meet the mandate. Now half of all obstetrics-gynecology training programs incorporate routine training, and an additional 40% provide access to optional training.[7]

MSFC now has members from 146 medical schools in the United States, Canada, and elsewhere. Each year, MSFC chapters hold more than 900 campus events in addition to national and regional meetings to educate and motivate students to learn about abortion. One of the most sought-after programs, the 1-month externship for preclinical or clinical students to work in abortion clinics improves students' knowledge about abortion and increases their intention to include abortion in their future practices.[17]

The impact of abortion training on physician practice extends beyond performing the abortion procedure. Exposure to an integrated family planning rotation improves residents' skills in other areas of family planning, such as pregnancy options counseling, contraception counseling, and intrauterine device (IUD) placement.[10] Residents also learn transferable skills, such as early pregnancy ultrasound, pain management in outpatient surgery, and evidence-based miscarriage management.[11,12,18] Residents report that they value the training greatly, regardless of their intention to provide abortion in later practice.[12,19]

Some obstetrics-gynecology residents who, because of personal beliefs, choose not to participate in all aspects of abortion training, still highly value the exposure to abortion care. In a qualitative study of graduate obstetrician-gynecologists, one physician who opted out of performing abortions during the rotation said that he learned how to clinically size the uterus, check for villi, etc. -- skills he now uses in day-to-day practice. He helped counsel patients and found alternative contraception for them afterward.[12] The experience also can influence clinicians' feelings toward women who have abortions, even when their own attitudes about abortion don't change. One obstetrician-gynecologist realized that "coming face-to-face with the problematic situations that lead women to have abortions really opened my mind and helped me to become nonjudgmental about the whole thing."[12]

Although exposure to abortion training increases the likelihood that residents will perform abortions after residency, only about half actually do so.[9] The assumption that fear of violence plays a major role in preventing integration of abortion into practice has not been substantiated by research.[20] Instead, the stigma surrounding abortion manifests in the professional realm as formal or informal policies imposed by practices or employers and in conflicts with peers and colleagues.[20,21] An effort to prepare graduating residents to manage these barriers, "Integrating Family Planning into Practice" (part of the Ryan Program), provides resources in areas such as interviewing and negotiation skills, and offers an online support community.

An important step in ensuring that obstetrician-gynecologists integrate abortion into their practices is to support the inclusion of abortion in undergraduate medical education and inspire medical students to care about this vital health service. I have confidence that training improvements have increased competency in abortion as well as in other areas of obstetrics and gynecology among recent graduates.[1,11] Perhaps the biggest challenge will be to find ways to support these clinicians in overcoming the professional obstacles they will encounter in the practice of medicine.

Ana G. Cepin, AB, MD, and Maryam Guiahi, MD, MSc

Training in obstetrics and gynecology must prepare residents for all aspects of women's healthcare, including abortion. Surgical abortion is one of the most common procedures performed in women. Aside from providing an essential public health service, abortion training is also helpful in the development of surgical skills, understanding of anatomy, and management of complications. ACGME and ACOG both agree that abortion training is important.[5,6] In a recent bulletin, ACOG wrote that it "supports education in family planning and abortion for both medical students and residents and abortion training among residents."[6] Since 1995, ACGME has recognized a decline in the number of abortion providers and created a more explicit requirement for obstetrics-gynecology residency programs to provide "access to experience" in induced abortion.[5] Nevertheless, a survey conducted in 2004 demonstrated that approximately half of all obstetrics-gynecology training programs still did not offer abortion training and those with institutional constraints, such as military and religious (ie, Catholic and Protestant) schools, were least likely to offer routine abortion training.[7]

National and state-wide legislation has also interfered with abortion training at accredited obstetrics-gynecology training programs in the United States. Following the ACGME requirement, the US Congress adopted anti-abortion legislation known as the Coats Amendment, which stated that residency programs that do not comply with abortion training requirements will not lose governmental funding.[22] Today, many state legislators are proposing anti-abortion legislation that may interfere with the provision of abortion services offered at training institutions. Anti-abortion legislation has interfered with potential training improvements and has helped some programs receive full accreditation despite inadequate training provisions.

Fortunately, some advances have taken place. National and local initiatives have been instituted to improve obstetrics-gynecology abortion training. Since 1999, a privately funded national initiative, the Ryan Program, has provided funding and technical expertise to obstetrics-gynecology departments in the United States, Puerto Rico, and Canada to develop family planning and abortion training within the teaching hospital or by linking with a women's healthcare clinic dedicated to providing family planning services. Currently, 62 of the 243 obstetrics-gynecology residency training programs in the United States and Puerto Rico have a Ryan Program, and Canada has 2 Ryan Programs (personal communication, Ryan Program National Office, August 26, 2011). Individual programs have also collaborated with freestanding clinics when on-site hospital training was unavailable. In New York City, National Abortion Rights Action League (NARAL) Pro-Choice New York obtained the support of newly elected Mayor Michael Bloomberg in 2002 to integrate residency training in abortion care into the 8 New York City public hospitals through nearby community and academic residency programs. These hospitals are responsible for training more than 150 obstetrics-gynecology residents over 4 years.[23] Clearly, aid and expertise to improve abortion training is available, and supportive legislation is possible.

Training in surgical abortions can be supplemented in other ways, particularly for programs that have difficulty providing routine instruction. Simulation has become more popular in all surgical specialties as resident work hours and surgical volumes decline. Pelvic models and a variety of other tools can be used to simulate manual vacuum aspiration. Simulation can also include drills during which residents learn how to handle complications such as hemorrhages, perforations, or retained products.

During my residency at a faith-based institution, I was frustrated with the lack of training opportunities related to family planning. With the help of peers and mentors, I developed a program called TEACH (Teaching Everything About Contraceptive Health).[24] During the first year after launching TEACH, we developed a 1-day on-site curriculum that included lectures from family planning specialists and an afternoon of workshops and simulation exercises related to contraception, sterilization, and induced abortion.[24] Given the popularity of the program, it has now been expanded to a 2-day event with the first day dedicated to contraception and sterilization and the second day to management of abnormal or undesired pregnancies. The university's administration supports the TEACH program and protects resident time during the program, because TEACH is a way of filling a gap in the program curriculum and helps to fulfill the ACGME requirement. During my fourth year, I also arranged for residents to rotate with a community provider who provides contraception and sterilization in the office-setting. Since I have graduated, increasing resident enthusiasm for learning about family planning has resulted in other clinical exposures to improve their training. Thus, even at a program with institutional constraints, ways to improve resident training in family planning can be found.

E-learning courses are also used to complement curricula in these areas. This past year, Physicians for Reproductive Choice and Health developed an e-learning curriculum about family planning for obstetrics-gynecology residents. The program, called LEARN (Lessons to Enhance Awareness of Reproductive Needs), is now being piloted at 18 obstetrics-gynecology programs across the country to determine the potential impact of this type of education. E-learning may be especially useful for obstetrics-gynecology residents, given the demands of the residency and its associated time constraints.

Residents can opt out of performing abortions, but they are still expected to learn how to manage the complications of abortion. The abortion training experience of these residents can be tailored to individual preferences and accomplished with involvement in select aspects of induced abortions. For example, residents who opt out can take histories and learn how to perform options counseling. Sonography for such patients is an opportunity to become proficient in the diagnosis of normal and abnormal pregnancies in the first and second trimesters. Some residents may choose to perform the cervical block and initiate dilatation (common aspects of other frequently performed gynecologic procedures) prior to suction procedures. Any experience or level of involvement will contribute to their proficiency in other aspects of women's healthcare. Simulation and e-learning can be useful here as well.

Currently, 97% of practicing obstetrician-gynecologists encounter patients seeking abortions, but only 14% perform them.[1] More than 87% of counties in the United States do not have an abortion provider.[2] Most providers are older than 50 years of age, and each year many are retiring.[25,26] Newly trained, competent providers are clearly needed to allow continued access to this service. Exposure to routine abortion training is correlated not only with future abortion provision,[9,27,28] but also with outpatient miscarriage management.[10] To ensure that providers, despite their personal preferences, are adequately trained to care for patients who desire this option, we must ensure that adequate abortion training occurs during obstetrics-gynecology residency.

Colleen M. Krajewski, MD

In the United States, abortion training in residency programs is elective and highly varied. Every residency must allow trainees to either "opt in" or "opt out" of abortion training. Training in the urgent care of the abortion patient is mandatory, as is training and education in contraception and sterilization. A dedicated family planning rotation is not a residency requirement. However, most residency graduates, even if they choose not to provide abortions, will regularly use the principles of family planning in their day-to-day practice; for

example, when patients seek hormonal contraception or surgical sterilization. With 1 of 3 American women having an abortion, familiarity with the procedure is an obligation to our patients.

Most abortions in this country are performed in freestanding abortion clinics; thus, abortion training is often physically separated from residency training. This was the case at my Midwestern residency program -- abortions were only performed in hospitals under extenuating circumstances. When I began residency, interested residents could spend a half day per week for 7 weeks (a total of 3.5 days) in a freestanding abortion clinic during the second year of residency. Residents gave the experience very positive reviews, but felt that it was not long enough to develop the knowledge and technical skills required to become proficient in abortion, and it did not address broader family planning educational objectives. In my opinion, the most important part of this experience was the patient interaction. We often say "every woman has a story." This becomes meaningful only after firsthand experience.

In my third year, I requested to spend a month away from residency to obtain full-time family planning and abortion training. This is similar to the amount of time dedicated to other subspecialties in obstetrics and gynecology, such as gynecologic oncology or reproductive endocrinology and infertility. A thorough didactic and surgical curriculum clarified and solidified my training in family planning, and I felt confident in my technical and academic knowledge at the completion of the rotation. I went on to give grand rounds on intrauterine contraception and became an abortion provider.

Following my experience, several of my co-residents requested the opportunity to pursue a similar elective. At the same time, the second-year curriculum had room for improvement, so a family planning rotation was developed. A full 7-week block is now dedicated to family planning education, and although residents can opt out of surgical abortion training, the rotation is required because it addresses a broad range of family planning topics. The rotation is still off-site because of hospital restrictions, but the success of the rotation and its seamless integration into the residency program is a testament to the support of our residency directors for family planning and abortion training.

I went on to pursue fellowship training in family planning at Johns Hopkins University, well-prepared by my residency experience. However, the difference that an academic division of family planning within a department makes in terms of residency education and research is remarkable. Residents have the opportunity to participate in surgical and office-based family planning as part of their core residency curriculum and also to regularly interact with family planning attending physicians as part of generalist faculty. An integrated family planning division serves to normalize this part of residency education.

My hope is that as more graduates of the family planning fellowship become members of academic departments, abortion training will become more integrated into residency education. Off-site rotations are excellent for resident education, but the separation can unconsciously stigmatize an already contentious field. However, as state-by-state restrictions on the provision of abortions in hospitals continue to develop, a strong academic and educational relationship with freestanding abortion clinics is fundamental to residency education and the care of our patients.

Diana L. Taylor, RNP, PhD, and Molly F. Battistelli

Most women face multiple obstacles when seeking abortion care. Nearly 87% of the nation's counties do not have an abortion provider, and this shortage is aggravated by factors such as inadequate or unavailable abortion training for women's health professionals, state abortion provider restrictions, segregation of abortion services from women's healthcare, and the worsening of anti-abortion harassment and violence.[3] A shortage of abortion providers creates additional barriers to abortion care, with related negative health consequences. Almost half of women having later abortions (which have higher complication rates) report problems finding or getting to a provider, resulting in a delayed abortion.[29,30]

Beginning in the 1990s, abortion training programs propagated nationally throughout the health professions in recognition of the aging population of current abortion providers and the lack of trained health professionals to replace them.[31-36] Professional organizations representing nurses, physicians, physician assistants, and public health professionals have called for efforts to expand the pool of clinicians who perform abortions to include family practice physicians, nurse practitioners (NPs), physician assistants (PAs), and certified nurse-midwives (CNMs).[37-39] These licensed and highly qualified clinicians care for patients in diverse settings, are more likely to provide care to poor and underserved populations, and are essential to improving access to all healthcare, including abortion services.[31,32,40-51]

Training in abortion care is limited, as suggested by national and regional studies.[33,34] A discrepancy exists between training in abortion care and other reproductive health services. For example, although nearly all NP, CNM, and PA education programs included didactic (96%) and clinical (87%) training in contraception, only half offered didactic training and only 21% offered clinical training in abortion procedures.[35,36,52] Similarly, although contraceptive management and pregnancy options counseling are a requirement of family medicine residency programs, a 2003 survey found that less than 3% of these programs offer routine training in abortion care as part of their curricula.

As a result of regulatory and interprofessional barriers, training in abortion care is typically even more difficult to access for NPs, CNMs, and PAs. Many facilities with established training programs have already committed their training slots to medical residents, medical students, or their own staff, and nonphysicians may face prejudice from trainers who are not supportive of including abortion in advanced practice nursing or PA scope of practice, or who see new abortion providers as possible competitors. Required competency in all aspects of abortion care, including ultrasound, pregnancy options counseling, paracervical anesthesia, conscious sedation, and complication management, may also be restricted because training slots for these procedures are equally competitive.[52] In addition, scope of practice restrictions specific to NPs, CNMs, and PAs (and some nonspecialist physicians) as abortion providers in two-thirds of states are a major barrier to abortion access and clinical training.[52-56]

Thirty years have passed since the nationwide call to expand the pool of clinicians who perform abortion and focus on training the next generation of health professionals who will continue this vital service. Slowly the results of these efforts have been reflected in small increases (or more frequently, smaller reductions) in the number of abortion providers in the United States. Unfortunately, over the same time period, new barriers with respect to who can provide abortion care and how that care must be provided have been erected as a result of both the politics of healthcare professional regulation and education, and the politics of abortion.[57] A professional toolkit for abortion providers, including NPs, CNMs, and PAs, is available for online download. This toolkit is designed to aid clinicians, educators, and administrators as they confront the sociopolitical and regulatory challenges associated with abortion care.[52]

The provision of this care must take into account whether the "professional can provide this proposed service in a safe and effective manner" and must not solely be on the basis of the lack of physicians available to provide the service.[58-60] Healthcare professionals across disciplines -- reproductive health and rights advocates, attorneys, and regulators -- must join together to promote the provision of abortion care by all qualified clinicians within coordinated reproductive healthcare, thereby preventing unintended pregnancies and protecting access to abortion care as well as practitioners' rights to provide essential reproductive healthcare for their patients.[61,62]

References

1. Stulberg D, Dude A, Dahlquist I, Farr AC. Abortion provision among practicing obstetricians-gynecologists. Obstet Gynecol. 2011;118;609-614. Abstract
2. Guttmacher Institute. Facts on induced abortion in the United States. http://www.guttmacher.org/pubs/fb_induced_abortion.html Accessed August 22, 2011.
3. Jones RK, Zolna MR, Henshaw SK, Finer LB. Abortion in the United States: incidence and access to services, 2005. Perspect Sex Reprod Health. 2008;40:6-16. Abstract
4. Espey E, Ogburn T, Chavez A, Qualls C, Leyba M. Abortion education in medical schools: a national survey. Am J Obstet Gynecol. 2005;192:640-643. Abstract
5. Accreditation Council for Graduate Medical Education. ACGME Program Requirements for graduate medical education in obstetrics and gynecology. http://www.acgme.org/acWebsite/downloads/RRC_progReq/220obstetricsandgynecology01012008.pdf Accessed August 22, 2011.
6. [No authors] ACOG Committee Opinion No. 424: abortion access and training. Obstet Gynecol. 2009;113:237-250.
7. Eastwood KL, Kacmar JE, Steinauer J, Weitzen S, Boardman LA. Abortion training in United States obstetrics and gynecology residency programs. Obstet Gynecol. 2006;108:303-308. Abstract
8. MacKay HT, MacKay AP. Abortion training in obstetrics and gynecology residency programs in the United States, 1991-92. Fam Plann Perspect. 1995;27:112-115. Abstract

9. Steinauer J, Landy U, Filippone H, Laube D, Darney PD, Jackson RA. Predictors of abortion provision among practicing obstetrician-gynecologists: a national survey. Am J Obstet Gynecol. 2008;198:39.e31-36.
10. Steinauer J, Silveira M, Lewis R, Preskill F, Landy U. Impact of formal family planning residency training on clinical competence in uterine evacuation techniques. Contraception. 2007;76;372-376. Abstract
11. Dalton V, Harris L, Bell J, et al. Treatment of early pregnancy failure: does induced abortion training affect later practices? Am J Obstet Gynecol. 2011;204:493.e1-6.
12. Freedman L, Landy U, Steinauer J. Obstetrician-gynecologist experiences with abortion training: physician insights from a qualitative study. Contraception. 2010;81:525-530. Abstract
13. Brahmi D, Dehlendorf C, Engel D, Grumbach K, Joffe C, Gold M. A descriptive analysis of abortion training in family medicine residency programs. Fam Med. 2007;39:399-403. Abstract
14. Dehlendorf C, Brahmi D, Engel D, et al. Integrating abortion training into family medicine residency programs. Fam Med. 2007;39:337-342. Abstract
15. Herbitter C, Greenberg M, Fletcher J, Query C, Dalby J, Gold M. Family planning training in US family medicine residencies. Fam Med. 2011;43:574-581. Abstract
16. Nothnagle M. Benefits of a learner-centred abortion curriculum for family medicine residents. J Fam Plann Reprod Health Care. 2008;34:107-110. Abstract
17. Pace L, Sandahl Y, Backus L, Silveira M, Steinauer J. Medical Students for Choice's Reproductive Health Externships: impact on medical students' knowledge, attitudes and intention to provide abortions. Contraception. 2008;78:31-35. Abstract
18. Steinauer JE. Impact of formal family planning training on residents' transferable gynecology skills. Program and abstracts of 2011 Council on Resident Education in Obstetrics and Association of Professors in Gynecology and Obstetrics Annual Meeting; March 9-12, 2011; San Antonio, Texas. Presentation 3d.
19. Steinauer J, Drey EA, Lewis R, Landy U, Learman LA. Obstetrics and gynecology resident satisfaction with an integrated, comprehensive abortion rotation. Obstet Gynecol. 2005;105:1335-1340. Abstract
20. Freedman L, Landy U, Darney P, Steinauer J. Obstacles to the integration of abortion into obstetrics and gynecology practice. Perspect Sex Reprod Health. 2010;42:146-151. Abstract
21. Freedman L. Willing and Unable. Nashville, Tenn: Vanderbilt University Press; 2010.
22. Foster AM, van Dis J, Steinauer J. MSJAMA. Educational and legislative initiatives affecting residency training in abortion. JAMA. 2003;290:1777-1778. Abstract
23. Sankey HZ, Lewis RS, O'Shea D, Paul M. Enhancing resident training in abortion and contraception through hospital-community partnership. Am J Obstet Gynecol. 2003;189:644-646. Abstract
24. Guiahi M, Cortland C, Graham MJ, et al. Addressing OB/GYN family planning educational objectives at a faith-based institution using the TEACH program. Contraception. 2011;83:367-372. Abstract
25. O'Connell K, Jones HE, Simon M, Saporta V, Paul M, Lichtenberg ES. First-trimester surgical abortion practices: a survey of National Abortion Federation members. Contraception. 2009;79:385-392. Abstract
26. O'Connell K, Jones HE, Lichtenberg ES, Paul M. Second-trimester surgical abortion practices: a survey of National Abortion Federation members. Contraception. 2008;78:492-499. Abstract
27. Allen RH, Raker C, Steinauer J, Eastwood KL, Kacmar JE, Boardman LA. Future abortion provision among US graduating obstetrics and gynecology residents, 2004. Contraception. 2010;81:531-536. Abstract
28. Shanahan MA, Metheny WP, Star J, Peipert JF. Induced abortion. Physician training and practice patterns. J Reprod Med. 1999;44:428-432. Abstract
29. Henshaw SK, Finer LB. The accessibility of abortion services in the United States, 2001. Perspect Sex Reprod Health. 2003;35:16-24. Abstract
30. Torres A, Forrest JD. Why do women have abortions? Fam Plann Perspect. 1988;20:169-176. Abstract
31. Donovan P. Vermont physician assistants perform abortions, train residents. Fam Plann Perspect. 1992;24:225.
32. Kruse B. Advanced practice clinicians and medical abortion: increasing access to care. J Am Med Womens Assoc. 2000;55(3 Suppl):167-168.
33. Foster AM, Polis C, Allee MK, Simmonds K, Zurek M, Brown A. Abortion education in nurse practitioner, physician assistant and certified nurse-midwifery programs: a national survey. Contraception. 2006;73:408-414. Abstract
34. Foster A, Simmonds K, Jackson C, Martin S. What are nursing programs teaching students about reproductive health? A survey of program directors in Massachusetts. Program and abstracts of the National Abortion Federation Annual Meeting; April 6-8, 2008; Minneapolis, Minnesota. Poster presentation.
35. Nicholas C. Vermont Women's Health Center: Training program for abortion and related services. Burlington, VT: Vermont Women's Health Center, 1991.
36. Policar M, Pollack A. Clinical Training Curriculum in Abortion Practice. Washington DC: National Abortion Federation;1995.
37. American College of Nurse-Midwives. Position Statement: Certified Nurse-Midwives and Certified Midwives as Primary Care Providers/Case Managers. Silver Springs, Md: American College of Nurse-Midwives; 1997.
38. National Abortion Federation and Citizens for Choice. Role of CNMs, NPs and PAs in abortion care. http://www.prochoice.org/pubs_research/publications/downloads/cfc/CNM_NP_PA_org_statements.pdf Accessed October 2, 2011.
39. Association of Reproductive Health Professionals. Position statement on abortion. 2008. http://www.arhp.org/about-us/position-statements#1 Accessed October 2, 2011.
40. Donaldson MS, Yordy KD, Lohr KN, Vanselow NA, eds. Primary Care: America's Health in a New Era. Washington, DC: National Academies Press; 1996.
41. US Congress, Office of Technology Assessment. Nurse practitioners, physician assistants, and certified nurse-midwives: A policy analysis. http://www.fas.org/ota/reports/8615.pdf Accessed October 2, 2011.
42. Grumbach K, Hart LG, Mertz E, Coffman J, Palazo L. Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington. Ann Fam Med. 2003;1:97-104. Abstract
43. Hansen-Turton T, Line L, O'Connell M, Rothman N, Lauby J. The nursing center model of health care for the underserved. http://www.nncc.us/site/pdf/Briefing%20Paper%20on%20Nurse-Managed%20Health%20Center%20Evaluation.pdf Accessed October 2, 2011.

44. Association of Women's Health, Obstetric and Neonatal Nurses, National Association of Nurse Practitioners in Women's Health. Women's Health Nurse Practitioner: Guidelines for Practice and Education. 6th ed. Washington, DC: Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) and National Association of Nurse Practitioners in Women's Health; 2008.

45. Roberts J, Sedler KD. The core competencies for basic midwifery practice: critical ACNM document revised. J Nurse Midwifery. 1997;42:371-372. Abstract

46. Avery MD, DelGiudice GT. High-tech skills in low-tech hands: issues of advanced practice and collaborative management. J Nurse Midwifery. 1993;38(2 Suppl):9S-17S.

47. Warriner IK, Meirik O, Hoffman M, et al. Rates of complication in first-trimester manual vacuum aspiration abortion done by doctors and mid-level providers in South Africa and Vietnam: a randomised controlled equivalence trial. Lancet. 2006;368:1965-1972. Abstract

48. Freedman MA, Jillson DA, Coffin RR, Novick LF. Comparison of complication rates in first trimester abortions performed by physician assistants and physicians. Am J Public Health. 1986;76:550-554. Abstract

49. Goldman MB, Occhiuto JS, Peterson LE, et al. Physician assistants as providers of surgically induced abortion services. Am J Public Health. 2004;94:1352-1357. Abstract

50. Levi J, Simmonds KE, Taylor D. The role of nursing in the management of unintended pregnancy. Nurs Clin North Am. 2009;44:301-314. Abstract

51. Joffe C, Yanow S. Advanced practice clinicians as abortion providers: current developments in the United States. Reprod Health Matters. 2004;12(24 suppl.):198-206.

52. Taylor D, Safriet B, Dempsey G, Kruse B, Jackson C. Providing abortion care: a professional toolkit for nurse-midwives, nurse practitioners and physician assistants. http://www.apctoolkit.org/PDFs/APCToolkit_COMPLETEBOOK.pdf Accessed October 2, 2011.

53. Schultz EC. Key legal barriers for provision of abortion by advanced practice clinicians. http://www.ansirh.org/_documents/issue_briefs/ansirh_brief2legal.pdf Accessed October 2, 2011.

54. Fairman JA, Rowe JW, Hassmiller S, Shalala DE. Perspectives: broadening the scope of practice of nursing. N Engl J Med. 2011;364:193-196. Abstract

55. Taylor D, Safriet B, Weitz T. When politics trumps evidence: legislative or regulatory exclusion of abortion from advanced practice clinician scope of practice. J Midwifery Womens Health. 2009;54:4-7. Abstract

56. Weitz T, Anderson P, Taylor D. Advancing scope of practice for advanced practice clinicians: more than a matter of access. Contraception. 2009;80:105-107. Abstract

57. Schultz EC. Key legal barriers for provision of abortion by advanced practice clinicians. clinicians. http://www.ansirh.org/_documents/issue_briefs/ansirh_brief2legal.pdf Accessed October 2, 2011.

58. Cunningham R. Tapping the potential of the health care workforce: Ssope-of-practice and payment policies for advanced practice nurses and physician assistants. National Health Policy Forum. Washington, DC: George Washington University, 2010. http://www.nhpf.org/library/background-papers/BP76_SOP_07-06-2010.pdf Accessed October 2, 2011.

59. LeBuhn R, Swankin DA. Reforming scopes of practice: a white paper. https://www.ncsbn.org/ReformingScopesofPractice-WhitePaper.pdf Accessed October 2, 2011.

60. National Council of State Boards of Nursing. Changes in healthcare professions' scope of practice: legislative considerations. https://www.ncsbn.org/ScopeofPractice.pdf Accessed October 2, 2011.

61. World Health Organization. Sexual and reproductive health core competencies in primary care. http://www.who.int/reproductivehealth/publications/health_systems/9789241501002/en Accessed October 2, 2011.

62. Taylor D, Levi A, Simmonds K. Reframing unintended pregnancy prevention: a public health model. Contraception. 2010;81:363-366. Abstract

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