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Training in aspiration abortion care: An observational cohort study of achieving procedural competence

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ABSTRACT

Background: Studies in multiple countries have found that the provision of aspiration abortion care by trained nurses, midwives, and other front-line health care workers is safe and acceptable to women. In the United States, most state abortion laws restrict the provision of abortion to physicians; nurse practitioners, nurse-midwives, and physician assistants, can legally perform medication abortion in only twelve states and aspiration abortion in five. Expansion of abortion care by these providers, consistent with their scopes of practice, could help alleviate the increasing difficulty of accessing abortion care in many states.

Objectives: This study used a competency-based training model to teach advanced practice clinicians to perform vacuum aspiration for the abortion care. Previous research reporting on the training of providers other than physicians primarily focused on numbers of procedures performed, without assessment of skill competency or clinician confidence.

Design: In this prospective, observational cohort study, advanced practice clinician trainees were recruited from 23 clinical sites across six partner organizations. Trainees participated in a standardized, competency-based didactic and clinical training program in uterine aspiration for first-trimester abortion.

Settings: Trainee clinicians needed to be employed by one of the six partner organizations and have an intention to remain in clinical practice following training.

Participants: California-licensed advanced practice clinicians were eligible to participate in the training if they had at least 12 months of clinical experience, including at least three months of medication abortion provision, and certification in Basic Life Support.

Methods: A standardized, competency-based training program consisting of both didactic and clinical training in uterine aspiration for first-trimester abortion was completed by 46 advanced practice clinician participants. Outcomes related to procedural safety and to the learning process were measured between August 2007 and December 2013, and compared to those of resident physician trainees.

Results: Essentially identical odds of complications occurring from advanced practice clinician-performed procedures were not significantly different than the odds of complications occurring from resident-performed procedures (OR: 0.99; CI: 0.46–2.02; $p > 0.05$) after controlling for patient sociodemographic and medical history. The number of training days to foundational competence ranged from six to 10, and the number of procedures to competence for those who completed training ranged from 40 to 56 (median = 42.5).

Conclusions: A standardized, competency-based trainingprogram can prepare advanced practice clinicians to safely provide first-trimester aspiration abortions. Access to safe abortion care can be enhanced by increasing the number of providers from cadres of clinicians other than physicians.

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What is already known about the topic?

- Multiple studies have reported on small cohorts of nurses, physician assistants, midwives, and other allied health providers who have been trained to provide vacuum aspiration abortion in South Africa, Ghana, Vietnam.
- All of the current published evidence regarding the performance of vacuum aspiration abortion by providers other than physicians has occurred outside of the United States, and has employed limited numbers of providers.

What this paper adds

- This study used a competency-based training model to teach nurse practitioners, certified nurse-midwives, and physician assistants to perform vacuum aspiration for the inclusion of abortion care in their clinical practice.
- Previous research reporting on the training of providers other than physicians primarily focused on numbers of procedures performed, without assessment of skill competency or clinician confidence during the training phase.
- Previous studies also show similar complication rates when compared with physicians, although the process of preparing the providers for practice is not thoroughly detailed.

1. Introduction

The integration of uterine vacuum aspiration procedures into the care provided by women's health providers offers a means to improve services for the prevention and management of unintended pregnancy and early pregnancy loss (Hewitt and Cappiello, 2015; Levi et al., 2009; Taylor, 2011; World Health Organization, 2012). In many settings in the US, regulations have created barriers to safe, effective, timely, efficient, patient-centered, and equitable abortion services (Darney et al., 2018; National Academies of Sciences, 2018). These regulations often prohibit qualified providers from providing services, overrule patients' and providers' clinical decision making, or require medically unnecessary services and delays in care (National Academies of Sciences, 2018). Under such regulations, abortion care and training for health professionals has lagged behind innovations in other areas; it is often fragmented by health professional type, and segregated from primary care due to both political and institutional barriers to routine incorporation into clinical education.

Studies in multiple countries have found that the provision of aspiration abortion care by trained nurses, midwives, and other front-line health workers is safe and acceptable to women; however, the development of clinical competency has yet to be addressed as a study outcome (Freedman et al., 1986; Goldman et al., 2004; Jejeebhoy et al., 2011; National Academies of Sciences, 2018; Taylor et al., 2013; Warriner et al., 2006). In the US context, these clinicians include nurse practitioners, nurse-midwives, and physician assistants, referred to here as advanced practice clinicians, whose education and training standards are regulated through various state and national mechanisms (Institute of Medicine, 2011). These clinicians receive university-based training, and their licensure requires advanced clinical and didactic training. They practice in all areas of medicine, including reproductive health care, as licensed independent practitioners. The provision of abortion care in the US is restricted by most state laws to physicians; currently, advanced practice clinicians can legally perform medication abortion in only 12 states, and aspiration abortion in five (Vermont, New Hampshire, Montana, Oregon, and California) (Guttmacher Institute, 2014). At the current time, laws restricting access to abortion have proliferated in the US, discouraging practitioners and reducing the number of clinicians available to provide abortion services (Guttmacher Institute, 2014). Expansion of abortion care by advanced practice clinicians, consistent with their scope of practice for similar services, could help alleviate the increasing difficulty of accessing abortion care in many states (Barry and Rugg, 2015; Weitz et al., 2013).

Achieving this aim requires both policy changes and the implementation of training programs. Evidence demonstrates that advanced practice clinicians can provide safe aspiration abortion care, but little is known about how advanced practice clinicians develop competency to perform aspiration abortion, and whether clinical outcomes during skill acquisition differ from those of physicians in training. The purpose of this study is to identify advanced practice clinicians' processes for attaining aspiration abortion skill, which is key to incorporating this training into educational programming, and increasing the number of competent abortion providers in areas with limited access.

2. Methods

2.1. Study design

In this prospective observational cohort study, advanced practice clinician trainees were recruited from 23 clinical sites across six partner organizations (five Planned Parenthood affiliates and Kaiser Permanente Northern California). The sample consisted of self-selected trainees who participated in a standardized, competency-based program consisting of didactic and clinical training in uterine aspiration for first-trimester abortion. Outcomes related to procedural safety and to the learning process were measured between August 2007 and June 2013; procedural safety was assessed by complication rates, and the learning process was measured by trainee self-report and trainer assessment. Once assessed as competent by a physician trainer, advanced practice clinicians were able to integrate newly-acquired skills into their practices at their respective health facilities. Results of this practice phase are reported elsewhere, demonstrating complication rates comparable to those of experienced physicians (Frank et al., 2010; Weitz et al., 2014), with high rates of patient acceptability and satisfaction (Frank et al., 2010; Taylor et al., 2013). To evaluate safety outcomes during training, a sub-analysis was conducted comparing individual abortion complications among advanced practice clinicians during their training with those of obstetrics/gynecology and family medicine residents undergoing abortion training in the same or comparable clinical settings.

To conduct this research, investigators applied to the California Office of Statewide Health Planning and Development (OSHPD) for a waiver of the state law at the time of the study limiting the performance of "surgical abortion" to physicians. Approval for the project, known as the Health Workforce Pilot Project (HWPP) #171, was granted in March 2007 and extended through December 2013. Institutional review board approvals were obtained from the University of California, San Francisco; Ethical & Independent Review Services; and from the Kaiser Foundation Research Institute.

The training curriculum employed in this study used an educational model that combines standardization of content (i.e., curriculum based on established knowledge and core competencies) with flexibility of implementation (i.e., training plans adaptable to different teachers, learners, and facility settings). The training was designed based on the four main principles guiding Competency-Based Medical Education (CBME): a focus on outcomes; emphasis on learner abilities; de-emphasis on time-based training; and a promotion of greater learner-centeredness (Paul et al., 2009). The HWPP #171 curriculum incorporated content from medical textbooks on abortion care (Goodman et al., 2012; Paul, 1999), an open-access textbook employing problem-based learning used to train US-based clinicians in abortion care (Goodman et al., 2012), and the professional tool kit for advanced practice clinicians on integrating abortion care into their practice (Taylor et al., 2009). Trainees in this study had the option of a self-paced or group-based approach to knowledge acquisition (readings and completion of problem-based learning), followed by hands-on training