The Effects of Abortion Training on Family Medicine Residents' Clinical Experience

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BACKGROUND AND OBJECTIVES: RHEDI, Reproductive Health Education in Family Medicine, offers technical assistance and funding to family medicine residency programs to support integrated opt-out abortion and reproductive health training for residents. This study assessed the impact of this enhanced training on residents' reproductive health experience.

METHODS: Investigator-developed pre- and post-surveys were administered online to 214 residents at 12 family medicine residency programs before and after their RHEDI training experience. Surveys addressed experience in contraception and abortion, attitudes around abortion provision, and post-residency intentions. Descriptive statistics were generated, and statistical tests were performed to assess changes after training.

RESULTS: Surveys had a 90% response rate. After the RHEDI enhanced reproductive health rotation, residents reported increased experience in contraception provision, early pregnancy ultrasound, aspiration and medication abortion, and miscarriage management. After training, residents with experience in IUD insertion increased from 85% to 99%, and contraceptive implant insertion experience rose from 60% to 85%. Residents who had performed any abortions increased from 15% to 79%, and self-rated competency in abortion increased. Finally, almost all residents agreed that early abortion was within the scope of family medicine, and training confirmed residents' intentions to provide reproductive health services after residency.

CONCLUSIONS: Integrated training in reproductive health, with an emphasis on abortion, increases residents' experience and underscores their understanding of the role of these services in family medicine. Increasing the number of family medicine residency programs that offer this training could help prepare family physicians to meet their patients' needs for reproductive health services.

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Family physicians provide a range of reproductive health care, including contraception, diagnosis of pregnancy, prenatal care, and miscarriage management. Because of this, they are well-positioned to provide early abortion care to their patients in the primary care setting. Abortion provision in the context of primary care can enhance continuity of care and offer increased access for women. To that end, over the past decade, an increasing number of family medicine residency programs have integrated training in early abortion care into the residency curriculum.

Studies have found the inclusion of abortion training within family medicine and OB-GYN residency programs increases residents' knowledge and skills in these areas. An early study found that residents who had been trained in abortion not only had significantly higher abortion-related knowledge, but also demonstrated more positive attitudes toward abortion than a similar group of residents who had not received training.[1] At another residency program, residents' pre- and post-surveys demonstrated that abortion training increased residents' knowledge of early abortion and self-assessed skills related to abortion, both technical and interpersonal.[2] Studies assessing abortion training within OB-GYN residency programs found similar results, with residents reporting increased experience and higher self-assessed competence in abortion and contraception care.[3,4]

RHEDI, Reproductive Health Education in Family Medicine, was founded in 2004, responding to the need for comprehensive training in abortion and contraception within

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family medicine. It is based at the Department of Family and Social Medicine at Montefiore Medical Center, which has been regularly training residents in abortion for over 30 years. RHEDI is independently funded and offers technical assistance and financial support to enable family medicine residency programs to establish a required rotation in reproductive health, including abortion and comprehensive family planning. At each residency program, a faculty member serves as the RHEDI program director and is responsible for integrating enhanced reproductive health training into the curriculum, as well as clinical involvement with precepting and direct supervision of trainees.

Through the RHEDI program, residency training experience in early abortion generally includes supervised provision of abortion care within the continuity clinic setting and training at a high-volume abortion site, as well as didactic and psychosocial training in abortion. Residents also gain increased experience with contraceptive provision, including LARC methods, contraceptive and abortion options counseling, use of ultrasound for early pregnancy dating, miscarriage management, and management of any complications resulting from abortion, miscarriage, or contraception, should they occur. Abortion training focuses on medication abortion and manual vacuum aspiration (MVA), a simple procedure using a handheld syringe that is well suited for in-office care for abortion and miscarriage management, as well as electric vacuum aspiration (EVA) for pregnancies beyond 10 weeks gestational age. Training is integrated into the curriculum, but residents can choose not to perform abortions, though they are expected to participate in all other aspects of training.

A formal evaluation component of the RHEDI program measures the effect of training on residents' clinical experience in abortion, contraception, and other related skills and attitudes.

This study presents evaluation data from residents at family medicine residency programs with enhanced reproductive health training through RHEDI (RHEDI programs). Our study was designed to build on existing research on residents' experience in abortion and contraception provision after training. The larger sample size, as well as the wide geographic distribution of programs, permits a broad and updated picture of the effects of integrated abortion training in family medicine residency programs.

Methods

Data in this analysis comes from 214 residents at 12 RHEDI programs in the United States, collected between 2012 and 2014. Data are routinely collected from all RHEDI programs by RHEDI staff, in collaboration with local residency faculty and staff, to gain a comprehensive picture of training at each program, assist in program evaluation, and provide technical assistance to programs as needed. While RHEDI worked with three additional residency programs at the time of this study, data from those programs was not included in this analysis due to variation in data collection timelines.

The majority of residency programs incorporated abortion and reproductive health training into a single block rotation, though others used a series of block rotations or combined longitudinal experience with a block rotation. Training most frequently took place in PGY2, although some programs had training in PGY1 and/or PGY3, and most programs incorporated training into an existing women's health or gynecology rotation. All residents trained at a specialized high-volume abortion clinic for an average of roughly 10 half-days per rotation, and at eight out of 12 programs, residents also provided an average of 6 half-days of abortion care during dedicated sessions at a family medicine clinic. All programs also incorporated didactic and psychosocial training on abortion, most commonly one-on-one during the abortion rotation and as part of group didactic sessions, and at all programs, residents were able to integrate a range of reproductive health services into their continuity practice. A sample schedule for the women's health rotation is presented in Table 1.

Surveys are completed by residents before and after the rotation to assess their training, clinical experience, attitudes, and intentions to provide abortion and contraception post-residency. Surveys are completed online and take approximately 10 minutes. At the majority of these residency programs, where training is concentrated in a month-long block rotation during the PGY2 year, residents complete the surveys immediately before and after their rotations. At a few programs, where training takes place over a longer period of

Table 1: Sample Resident Schedule on Enhanced Reproductive Health Rotation

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	STI clinic	Reproductive Health session at Family Medicine Center	Family Medicine Center continuity	School-Based Health Center	Abortion training at high-volume abortion clinic
PM	Family Medicine Center continuity	Didactics	Reproductive Health session at Family Medicine Center	GYN at Family Medicine Center	

residency, residents complete the pre-survey before any reproductive health training begins and the post-survey at the end of training. The pre-rotation survey contained 22 items, and the post-rotation survey contained 23 items: 18 paired questions enabled comparison between pre- and post-rotation responses. Questions on the survey are primarily multiple choice or 4-point Likert scales and cover topics such as didactic training and clinical experience in contraception, miscarriage, and abortion care. Detailed questions are asked about clinical training in abortion, including types and numbers of abortions performed. While most clinical skills are compared before and after the RHEDI rotation, in a few cases residents' skills after the RHEDI rotation are compared to their skills after medical school. Residents were also asked about their intention to participate in a range of reproductive health services in their post-residency practice. The survey was based on a long-established similar survey asking OB-GYN residents about abortion and reproductive health training, and face validity was considered sufficient. Only residents who completed both the pre- and post-survey are included in this analysis. Residents entered their initials and pager numbers to assist in matching pre- and post-surveys, but no additional identifying information was collected, in order to preserve residents' anonymity to research personnel.

Survey results were analyzed in SPSS version 22. Descriptive statistics were assessed for all variables. In addition, paired *t* tests were used to assess changes from pre to post. This study was approved as exempt by the Montefiore Medical Center Institutional Review Board.

Results

Effects of RHEDI Rotation on Residents' Experience

Description of Sample. Our resident survey sample consists of 214 sets of matched pre- and post-surveys from 12 residency programs, collected between July 2012, when the resident survey instruments were last revised, and December 2014. These 214 residents represent 90% of the 238 residents who began and completed their training within this time period. Table 2 presents demographic characteristics of the sample.

Clinical Experience in Counseling, Contraception, Miscarriage Management, and Ultrasound. While most residents had experience in contraception provision in residency before starting the RHEDI rotation, after completing the RHEDI rotation, residents' training had increased significantly in all contraceptive methods except oral contraceptive pills, where they already had a very high level of experience. Details are presented in Table 3.

Counseling and miscarriage management were compared to experience during medical school. At that point, 46% of residents reported training in pregnancy options counseling, and 26% reported training in abortion methods options counseling. After their RHEDI training experience, 87% of residents had received training in pregnancy options counseling and 81% in abortion methods options counseling (all *P* values > .001).

Table 2: Characteristics of Residents in Sample (Total n=214)

Geographical distribution	Percent and Number of Residents
Northeast	26% (56)
West	58% (125)
Midwest	7% (15)
Southwest	9% (18)
Program year at pre-survey	
PGY1	3% (7)
PGY2	79% (169)
PGY3	18% (38)
Program year at post-survey	
PGY2	72% (155)
PGY3	28% (59)
Participation in reproductive health rotation	
Fully participated	79% (169)
Participated in clinical abortion training but did not perform abortions	11% (23)
Did not participate in clinical abortion training and did not perform abortions	10% (22)

Table 3: Contraceptive Methods Provided by Percentage of Residents Before and After RHEDI Rotation

Type	Before RHEDI Rotation	After RHEDI Rotation	*P* Value
IUD insertion	85%	99.5%	<.001
Contraceptive implant insertion	60%	82%	<.001
Emergency contraception	57%	77%	<.001
Depo-Provera	67%	85%	<.001
Contraceptive patch	47%	64%	<.001
Contraceptive ring	52%	63%	<.001
Oral contraceptives	98%	99.5%	.877
Condoms	92%	97%	.007
Diaphragm/cervical cap	3%	8%	.014

Twenty-nine percent of residents reported clinical training during medical school in miscarriage management, whereas after the RHEDI training experience, 66% of residents had training in this skill (*P*>.001).

The RHEDI rotation also served to increase residents' experience with early pregnancy dating via ultrasound. Before they began the RHEDI rotation, 49% of residents reported having performed ultrasounds during residency for early pregnancy dating, while after the rotation, 78% had performed ultrasounds (*P*>.001). Eighty-eight percent of residents reported clinical training in ultrasound provision during the RHEDI rotation, which included both observational and hands-on training.

Clinical Experience in Abortion Provision. Before the RHEDI rotation, 24% of residents reported some clinical training in abortion, either hands-on or observational, during residency, and 15% of residents had provided at least one abortion. Medication abortions were the most common type of abortions that residents had provided before their RHEDI training, with 11% of residents having provided those, 10% having performed manual vacuum aspirations (MVA), and 7% who had provided electric vacuum aspiration (EVA).

After the enhanced women's health training through RHEDI, 90% of residents reported clinical abortion training, either hands-on or observational, and 79% reported direct provision of abortion. Twenty-one percent of residents did not perform abortions due to religious or personal objections. However, about half of the residents who did not perform abortions partially participated in abortion training in different ways, including observation, participating in counseling, providing aspiration procedures or medication for miscarriage management, or assisting in patient care before and after the abortion procedure.

Results show that RHEDI programs emphasize training in MVA, with almost all fully participating residents receiving training in MVA techniques. After MVA, residents were most commonly trained in EVA, followed by medication abortion. Details of clinical training in abortion for all fully participating residents, including rates and *P* values, are presented in Table 4.

The 15% of residents who had provided abortions before the RHEDI rotation had only provided about 10 abortions per resident. After the RHEDI rotation, residents who had performed any abortions had done a mean of 36 abortions, almost two thirds of which were MVA, as depicted in Table 5.

Resident training focused on first-trimester abortion, with residents trained to provide abortions to a mean of 13 weeks gestational age. See Table 6 for additional information.

Although 21% of residents chose not to provide abortions, 98% of all residents agreed or strongly agreed that early abortion was within the scope of family medicine, with no overall change before and after

Table 4: Fully Participating Residents' Clinical Training in Abortion Before and After the RHEDI Rotation (n=169)

	Before RHEDI Rotation	After RHEDI Rotation	*P* Value
Provided manual vacuum aspiration	12% (21)	97% (164)	<.001
Provided electric vacuum aspiration	9% (15)	80% (135)	<.001
Provided medication abortion	14% (24)	75% (126)	<.001

Table 5: Fully Participating Residents' Clinical Training in Abortion Before and After the RHEDI Rotation (n=169)

	Mean Number Performed in Residency After RHEDI Rotation, Per Resident
Mean number of medication abortions done among residents who had performed medication abortions	8.5
Mean number of MVAs done among residents who had performed MVAs	22.4
Mean number of EVAs done among residents who had performed EVAs	9.6
Mean number of total abortions done among residents who had done abortions of any type	36.4 (6.5 medication abortions, 21.9 MVAs, 8 EVAs)

Note: The mean number of total abortions done by fully participating residents during the RHEDI rotation was 36.4. Because not all residency programs offer training in all three types of abortion, this number is less than the sum of the mean number of each type of abortion done by residents who trained in that type of abortion.

the RHEDI rotation. However, significantly more residents strongly agreed with the statement after training, with 69% of residents strongly agreeing before the rotation and 75% strongly agreeing afterwards (*P*=.025).

Intentions to Provide Reproductive Health Services After Graduation. Most residents began the RHEDI rotation with strong intentions to provide reproductive health services, and the training confirmed those intentions. After RHEDI training, the vast majority of residents intended to insert IUDs and implants, with 97% of respondents stating they would probably or certainly insert IUDs and 95% stating they would probably or certainly insert implants. The increase after training in intent to provide both IUDs and the contraceptive implant was statistically significant (*P* values of .003 and .001 respectively).

After RHEDI training, most residents intended to provide miscarriage management services to their patients. At that point, 77% of residents stated that they would probably or certainly provide medical management of miscarriage, and 64% stated they would probably or certainly provide aspiration management for miscarriage. Many intended to provide abortion services as well: 51% of residents said they would probably or certainly provide aspiration abortion, and 59% said they would probably or certainly provide medication abortion. Intent to provide abortions is higher when examined only among those residents whose training included that type of abortion. Of those who provided aspiration abortions in training, 67% said they would probably or certainly provide aspiration abortions after residency, and 72% of those who provided medication abortion in training said they would probably or certainly do so after residency.

Table 6: Maximum Gestational Age Up to Which Residents Were Trained to Provide Abortions

Weeks of Gestational Age	% of Residents Trained to Perform Abortions to the Upper Limit of This Gestational Age
8 weeks or fewer	2%
9–11 weeks	14 %
12 weeks	19%
13 weeks	24%
14 weeks	28%
15–16 weeks	9%
17–22 weeks	4%

Discussion

After participating in the RHEDI rotation, residents' experience in reproductive health provision increased significantly. This was true for contraception provision, counseling, ultrasound use for early pregnancy dating, miscarriage management, and the three types of abortion in which they were trained: medication abortion, manual vacuum aspiration, and electric vacuum aspiration. In addition, post-training data reflects residents' high intentions to provide these services after residency graduation. This was equally true for those residents who had not demonstrated intention to provide abortions before the RHEDI rotation, who finished the training with substantial experience in abortion. These findings echo those of evaluations of abortion training in individual family medicine programs, continuing to build evidence for the effectiveness of this training[1,2] and demonstrating higher rates of reproductive health training than within family medicine residencies that do not include

this enhanced training.[5] Rates of medication abortion training were somewhat lower than anticipated: as a result of this analysis, program administrators have created changes to ensure residents receive medication abortion training in the high volume site.

An important finding that emerged from the survey was that nearly all residents agreed that early abortion was in the scope of family medicine, including the majority of residents who chose not to provide abortions. This is in line with a recent finding that 75% of family medicine educators believed that abortion was within the scope of family medicine[6] and argues for the routine inclusion of abortion training within residency.

Limitations of this study include the fact that some residency programs that routinely include abortion training were not included in analysis due to differences in data collection timelines. In addition, because the residency programs that were included in this study are among the few that offer routine abortion training, they may well attract residents with more interest in abortion provision, leading to higher rates of intention to provide these services after graduation than otherwise might be found. Finally, in order to preserve resident anonymity, demographic information was not collected from residents, so it is possible that the 10% of residents from whom matched surveys were not collected differed from the group of residents overall. As residents who had objections to abortion may have been less likely to complete these surveys, our results may slightly overestimate residents' intentions to provide abortion care.

It is important to note that while the RHEDI enhanced reproductive health rotation emphasized abortion training, it also increased residents' skills in other routine reproductive health services. Residents gained experience in a range of skills, and many specific competencies within abortion care are transferrable to other types of reproductive health care, such as IUD insertion and ultrasounds for prenatal care. Further, even if residents do not acquire skills to the extent that they can provide abortion independently, or they choose not to provide abortion in future, completion of abortion training during residency has been shown to develop residents' options counseling skills and empathy toward patients seeking abortion.[7]

Although residents' intentions to provide are high after training, and existing research shows increased abortion provision by physicians who received training in residency,[8] there is a need for future research to examine the long-term effects of abortion training during residency on graduated residents' patterns of practice. Further, training is currently limited to a small proportion of family medicine residency programs, as residency programs often face political and logistical opposition to providing abortion service and training. Expanding the number of programs that offer integrated abortion training would prepare more family physicians to offer comprehensive reproductive health care to their patients.

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