



# Virtual Intrauterine Device Placement Training Improves Clinician Comfort

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**BACKGROUND AND OBJECTIVES:** Virtual intrauterine device (IUD) training options can improve clinician continuing education and patient IUD access. Our objective was to evaluate a virtual, hands-on IUD training for primary care clinicians.

**METHODS:** Training sessions occurred via video conferencing and included didactic instruction on IUD eligibility, counseling, placement, and removal. Trainers used pelvic models to demonstrate procedures for all Food and Drug Administration-approved IUDs and guided trainees during hands-on practice with IUDs. Surveys administered before and immediately after training assessed clinician satisfaction and evaluated pre-to-post training changes in self-rated comfort level with IUD procedures. We evaluated the changes using Wilcoxon signed-rank sum tests.

**RESULTS:** Thirty-four New Mexico clinicians were trained during 29 sessions from January-June 2021. Trainees (n=32 responding to pre/post surveys) included nurse practitioners and midwives (48%), physician assistants (28%), physicians (17%), and clinicians in training (7%). Approximately one-third (37%) had previous experience placing IUDs. Elements of training delivery were highly rated by clinicians, with all trainees successfully using the virtual platform and half indicating that they would potentially choose a virtual training over an in-person option in the future. After the training, clinicians reported significantly increased comfort with all aspects of IUD placement and removal ( $P \leq .01$ ).

**CONCLUSIONS:** An interactive, virtual IUD training model was highly rated among practicing clinicians and increased their comfort with IUD placement and removal.

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Training in IUD procedures is typically conducted in person. However, other viable options are needed, as in-person training logistics are difficult for rural clinicians<sup>14,15</sup> and provider training must continue during public health emergencies. The use of simulations in procedural training and health care education prioritizes patient safety and can mitigate demands on training hours.<sup>16,17</sup>

Few evaluations of virtual options for clinician IUD training have been conducted. A Canadian study with family medicine residents found that satisfaction, procedural knowledge, and observed skills performance were comparable when the didactic and demonstration portions of an IUD insertion training were delivered via video versus a live session; both groups practiced insertion using pelvic models.<sup>18</sup> Our objective was to evaluate an interactive live virtual IUD training for practicing clinicians by assessing satisfaction and impact on self-rated comfort with IUD procedure skills.

Comprehensive contraceptive care includes offering a range of Food and Drug Administration (FDA)-approved methods to patients.<sup>1</sup> However, many primary care clinicians and reproductive health specialists lack the knowledge and technical skills to offer intrauterine devices (IUDs) to eligible patients.<sup>2-6</sup>

Misconceptions about IUD safety and appropriateness for specific patient populations (ie, adolescents, nulliparous patients) leave many untrained clinicians ill equipped to offer them.<sup>3,4,7-10</sup> Training that addresses IUD knowledge gaps and technical skills can increase patient access,<sup>11,12</sup> especially in rural communities.<sup>5,13</sup>

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## Methods

### *Virtual Intrauterine Device Practicum*

The Long-Acting Reversible Contraceptive (LARC) Mentoring Program (LMP) at the University of New Mexico (UNM) Health Sciences Center has used in-person instruction to train clinicians to provide comprehensive reproductive counseling and to insert and remove IUD and implant devices since 2016, with the goal of increasing statewide access to a range of contraceptive methods.

Starting in spring 2020, the response to the COVID-19 pandemic precluded most in-person training. In response, the LMP team developed and implemented an innovative virtual, hands-on IUD practicum in collaboration with the Beyond the Pill (BtP) program from the University of California, San Francisco.<sup>19</sup> The virtual practicum has on-going utility in New Mexico, a geographically large, predominantly rural state.<sup>20</sup>

Prior to the virtual training, attendees were mailed a pelvic model, contraceptive device demonstration kits, IUD insertion and removal instruments, and a phone camera tripod to support visualization of the model cervix and uterus. Attendees received a 2-hour, one-on-one or small group training with an experienced reproductive health provider via Zoom. The number of trainees per session was limited to allow trainers to more effectively guide participants through hands-on procedures over Zoom. The trainer delivered a 45-minute didactic presentation reviewing IUD eligibility, counseling, placement, and removal and performed an IUD procedure demonstration using a pelvic model. The trainer then provided individualized guidance while trainees practiced loading, placing, and removing all FDA-approved hormonal and copper IUDs. After the training, the pelvic model and instruments were mailed back to UNM using a pre-paid label.

### *Trainee Recruitment*

Trainees were recruited directly by LMP via professional society listservs, clinic outreach, and at reproductive training events in a rolling manner from January 2021-June 2021. Thirty-four New Mexico clinicians (all clinicians who expressed interest) were trained during 29 sessions during that time frame.

### *Evaluation Design*

The evaluation protocol was deemed exempt by the UNM Human Research Protections Office (#16-434). The project team used anonymous surveys administered pretraining and immediately posttraining to collect information on provider demographic and clinical characteristics, to assess learner satisfaction, and to evaluate changes in self-rated comfort level with IUD procedures. Comfort level was rated using Likert scales. Surveys were adapted from measures developed by Dodge, et al<sup>21</sup> and reviewed for face and content validity by LMP and BtP team members. Thirty-two trainees completed both the pre- and postsurveys.

### *Data Analysis*

We collected and managed data using REDCap software.<sup>22</sup> We conducted analyses in SPSS Statistics (Version 27, IBM, Armonk, NY). Descriptive statistics are presented as median and interquartile range or number and percentage. We used Wilcoxon signed-rank sum tests to evaluate pre-to-post training changes, overall and stratified by previous IUD experience (yes or no) or provider status (practicing or in training). Significance is reported at the  $P \leq .05$  level.

## Results

### *Participant Characteristics*

Participating clinicians included nurse practitioners and midwives (48%), physician assistants (28%), physicians (17%), and clinicians in training (7%, Table 1). About

one-third (37%) had previous experience placing IUDs.

### *Trainee Satisfaction*

Overall, elements of training delivery were highly rated, with potential room for improvement in the model and tripod setup instructions (Table 2). Half of participants said they would choose virtual over in-person training options in the future, and 100% said that they would recommend the training to a colleague. In addition, 100% of learners reported it was easy to ask the instructor questions and that their questions were adequately answered. Open-ended comments mentioned that the virtual training format simplified logistics (eg, easier scheduling, no travel time).

### *Changes in Self-rated Comfort*

Participants reported statistically significant increases in comfort level with all aspects of IUD placement and removal ( $P \leq .010$ , Table 3). The biggest increases in comfort pre-to-post training were reported for uterine sounding (on a scale of 1-7, pre: median 2, interquartile range [IQR] [1, 3]; post: 6 [4, 6]) and inserting and deploying IUDs (pre: 1 [1, 4]; post: 5 [5,6]). Results were consistent regardless of provider status or previous IUD experience.

## Discussion

Evidence generated by this model project demonstrates potential for interactive, virtual IUD skills training for clinicians. Overall, participants rated the virtual practicum highly and felt that it improved their comfort with IUD procedures, with half indicating that they would actually choose a virtual over in-person training option in the future, citing easier logistics. There are opportunities to improve the training instructions.

Similar to the video IUD module findings of Garcia-Rodriguez and Donnon,<sup>18</sup> clinicians in this study were satisfied with an interactive live virtual IUD skills training

**Table 1: Demographic and Clinical Characteristics of Training Participants (N=32)**

Characteristics	n	Mean or %
Age (Years) <sup>a</sup>		38.5
Gender, Women		
Women	23	72
Men	7	22
Other <sup>b</sup>	2	6
Race/Ethnicity <sup>c,d</sup>		
Hispanic	3	10
Asian American or Asian	5	17
White	20	67
Other race <sup>e</sup>	2	6
Credentials <sup>a</sup>		
Midwife	1	3
Nurse practitioner	13	45
Physician	5	17
Physician assistant	8	28
Clinicians in training	2	7
Years of Clinical Experience		
Student with no clinical experience yet	3	9
0 - 3 years of experience	18	56
More than 3 years of experience	11	34
Clinical Care Setting <sup>f</sup>		
Public clinic <sup>g</sup>	8	25
Private practice	14	44
Hospital	4	13
Academic/university-based clinic	6	19
Previous Intrauterine Device (IUD) Insertion Experience <sup>g</sup>		
Ever placed an IUD	11	37

<sup>a</sup> Missing responses for three participants.

<sup>b</sup> Includes “genderqueer or gender nonconforming” and “prefer not to respond.”

<sup>c</sup> Missing responses for two participants.

<sup>d</sup> Respondents could select all options that applied. Respondents could indicate that they were Hispanic without selecting a race.

<sup>e</sup> Includes African American, African Descendent, or Black and Native Hawaiian or Other Pacific Islander.

<sup>f</sup> Clinical care setting types are not mutually exclusive; respondents could indicate that they provide care in multiple types of settings.

<sup>g</sup> For example, a federally qualified health center, school-based health center, Indian Health Service Clinic, or public health clinic.

model. Future evaluation of this model should compare outcomes for virtual versus in-person training and include objective assessment of clinician competence. In addition, outcomes for one on one versus small group training options should be

compared and cost effectiveness evaluated.

Limitations of this evaluation include a small sample size and loss to follow-up (n=2). Clinicians with strong interest in online training options may have disproportionately participated, and most trainees

were white women, limiting generalizability. We assessed comfort immediately posttraining, and provider perceptions may change as they apply skills in clinical practice. Social desirability bias may have influenced survey responses.

**Table 2: Percentage of Participants Who Strongly or Somewhat Agreed With Statements Assessing Their Satisfaction With a Virtual Intrauterine Device (IUD) Practicum (N=32)**

	n	%
I received all materials needed for the training prior to the training.	32	100
The instructions and photographs for setup clearly identified the materials.	29	94
I was able to set up the model and tripod using the included instructions.	26	81
I was able to clearly see what the trainer was demonstrating virtually.	32	100
It was easy to follow the trainer's instructions using the model and materials provided.	32	100
The instructors explained things in a way that was easy to understand.	32	100
I received personalized feedback on my skills during the training.	30	94
It was easy to ask the instructor questions. <sup>b</sup>	31	100
The instructor adequately answered all of my questions.	32	100
My skills improved as a result of this training. <sup>b</sup>	31	100
The technology platform (Zoom) provided a good learning experience.	29	91
In the future, I would choose the virtual IUD practicum as opposed to an in-person IUD practicum.	16	50

<sup>a</sup> Response categories included: Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, Strongly Disagree.

<sup>b</sup> Missing response for one participant.

**Table 3: Participants' Level of Comfort Performing Steps of Intrauterine Device (IUD) Insertion and Removal Before and After the Virtual IUD Training (N=31)<sup>a</sup>**

	Pretraining Median (25th, 75th Percentile)	Posttraining Median (25th, 75th Percentile)	P Value <sup>b</sup>
Providing comprehensive counseling, including up-to-date IUD information	5 (4, 5)	6 (5, 6)	.004
Bimanual exam of the uterus	5 (4, 6)	6 (5, 6)	.006
Speculum insertion	6 (5, 7)	6 (6, 7)	.010
Tenaculum placement	2 (1, 5)	5 (4, 6)	<.001
Uterine sounding	2 (1, 3)	6 (4, 6)	<.001
Inserting and deploying IUD using device-specific inserter	1 (1, 4)	5 (5, 6)	<.001
Cutting IUD strings to 3-4 cm in length using long scissors	2 (1, 4)	5 (5, 6)	<.001
Inserting speculum and using ring forceps to remove IUD	4 (2, 6)	6 (5, 7)	<.001
Inserting speculum and using alligator forceps to remove IUD without visualization of strings	1 (1, 3)	4 (3, 5)	<.001

<sup>a</sup> Assessed on a scale of 1 (not at all comfortable) to 7 (completely comfortable)

<sup>b</sup> Based on Wilcoxon signed-rank sum test

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