

## MM-TI

### Miscarriage Management Training Initiative

#### History and Conceptual Framework

About 15% of recognized pregnancies end in miscarriage, or spontaneous abortion<sup>1,2</sup>; the proportion increases with the sensitivity of pregnancy diagnosis to a range of 20%-62%<sup>3</sup>. Using a conservative incidence estimate of 10%, there may be half a million spontaneous abortions each year in the US<sup>3</sup>. Quality women's health care includes access to office-based uterine evacuation for spontaneous abortion<sup>4</sup>. Integrating office-based management of spontaneous abortion using manual vacuum aspiration (MVA) into primary care settings has the potential to improve the quality of care women receive from their primary care providers<sup>5</sup>.

#### **Health problem: evidence-based care for miscarriage**

##### *Management of spontaneous abortion*

Concerns about hemorrhage and infection, which can both occur with spontaneous abortion, have driven the current standard of care for management of spontaneous abortion in the operating room<sup>4,6</sup>. Available data<sup>7,8,9,10</sup> indicate that operating-room based surgery is still the default management strategy, although population-based data are lacking. Alternative management strategies are expectant (wait and see), medication (misoprostol), and office-based management via manual vacuum aspiration (MVA)<sup>11</sup>. MVA is as safe as operating room-based care in samples of women presenting with spontaneous abortion<sup>2</sup> and seeking induced abortion<sup>12,13</sup> and may improve patient satisfaction with care<sup>1,4</sup>. Office-based MVA results in significant time and cost savings compared to operating room-based management<sup>1,3,14</sup>. Clinical evidence clearly indicates that non-complicated spontaneous abortion cases should be counseled about the full range of management approaches<sup>4,15</sup>.

##### *Spontaneous abortion management in family medicine*

Family medicine residents are not routinely trained in office-based uterine aspiration for spontaneous abortion<sup>5</sup>, despite recommendations<sup>16</sup>. Training them to perform MVA in an office setting can greatly expand access to this procedure, especially in rural settings with limited access to specialists. Office-based management of spontaneous abortion is within the scope of family medicine practice<sup>17</sup>, allows family medicine physicians to provide comprehensive care to female patients, and requires intrauterine procedural skills many family medicine physicians already have<sup>16</sup>. In addition, experience with MVA for management of spontaneous abortion is a skill that can be translated to other procedures: uterine hemorrhage, IUD insertion, endometrial biopsies, and induced abortion.

##### *Spontaneous abortion management in obstetrics and gynecology*

Obstetrician-gynecologists are not all trained to manage SAB using a manual vacuum aspirator, although they are trained to perform D&Cs in the operating room and often to use an electric vacuum aspirator in an office setting. The project has successfully engaged OB/Gyns in trainings when appropriate and .....

#### *Spontaneous abortion management by Advanced Practice Clinicians*

State laws regulate scope of practice for Advanced Practice Clinicians (APC), such as Nurse Practitioners (NP, ARNP), Certified Nurse Midwives (CNM), and Physician's Assistants (PA). In Washington State, for example, APCs can aspirate a uterus for an indication of miscarriage, but may not perform aspiration induced abortions. In addition to state regulations, professional societies, institutions or employers may place restrictions on APCs using MVA to manage miscarriage. The literature indicates that APCs perform MVA procedures as safely as physicians; these data come from poor countries on women presenting for induced abortion. In the US, a large-scale training and evaluation project in California is testing whether this is true in US clinical settings (<http://www.ansirh.org/research/hwpp.php> and [www.apctoolkit.org/](http://www.apctoolkit.org/))

#### **Science problem: practice change**

Theories of practice change are heavily influenced by *diffusion of innovations*<sup>18</sup> theory and cognitive behavior change models; the extensive literature on cognitive theory is beyond the scope of this report, but no one theory is likely to be right for all situations, and different approaches may be appropriate to different contexts. Active efforts to speed up or encourage the diffusion process are commonly labeled *dissemination*<sup>19</sup>. *Implementation* has been conceptualized as active dissemination involving strategies to overcome barriers<sup>20</sup>.

*Implementation science* or knowledge translation research<sup>21</sup> is a related concept whose goal is the study "of methods to promote the systematic uptake of research findings...to improve the quality and effectiveness of health services"<sup>22</sup>. It can contribute to key questions in how translation of research findings, implementation, and scale-up can be achieved<sup>23</sup> and is crucial to developing the science of practice change, clinical teams<sup>24</sup>, and quality of care<sup>25,26</sup>.

The extensive literature on practice change theory highlights key strategies for successful implementation activities. Reviews of practice change research suggest that passive approaches are ineffective<sup>27,28</sup>, but highlight that interactive and mixed (passive and interactive) can impact practice<sup>27,29</sup>. Clinical evidence is necessary but not sufficient for practice change to occur<sup>30</sup>, and interventions must also address barriers and facilitators to change<sup>29</sup>. Research to date points to the importance of tailored interventions<sup>29,31</sup>, attention to context<sup>30,31</sup>, and commitment to change from the target population, opinion leaders, and the organization<sup>30,32</sup>. Opinion leaders or champions<sup>30</sup> are well-recognized, crucial components of the diffusion process<sup>18,33,34</sup>, can support or oppose innovation, and can be experts or peers<sup>34</sup>. Systems change approaches<sup>35</sup> explicitly acknowledge the need for comprehensive strategies to target multiple levels within a system to achieve change<sup>29</sup>.

The MM-TI incorporates stakeholder input, opinion leaders and champions, interactive strategies, outreach visits, participant feedback, tailoring, and an explicit focus on systems change. Our approach holds promise to achieve practice change.

### MM-TI Program characteristics

The MM-TI is designed to facilitate implementation of office-based management of spontaneous abortion, with a focus on manual vacuum aspiration (MVA). The intervention was designed to meet sites' individual needs for didactic content, hands-on practice, and attention to systems change. The MM-TI intervention is delivered at the site level, to a group of individuals. The intervention aims to change individual behavior, but recognizes the key role of the system or context in which individuals operate, and the importance of changing site-level "culture," norms and attitudes in order to facilitate diffusion of desired individual change. The intervention is intensive and multi-dimensional and incorporates stakeholder input, opinion leaders and champions, interactive strategies, outreach visits, participant feedback, tailoring, and an explicit focus on systems change. The intervention is intensive and multi-dimensional (didactics, hands-on, systems change), and is driven by the diffusion of innovations literature, synthesized above.

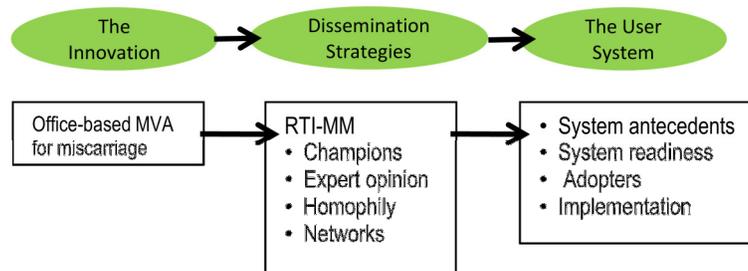
The original (WA State 2008-2010) overall goal of the MM-TI was to expose family medicine faculty, residents and clinical and administrative support staff to office-based uterine evacuation for miscarriage. Specific objectives were to 1) Train faculty and residents in manual vacuum aspiration (MVA) and medication management for uterine evacuation due to miscarriage and 2) Train clinical and administrative support staff in triage, assisting with procedure, patient counseling & support. The MM-TI has moved beyond an exclusive focus on family medicine and residency settings as it has expanded.

### Conceptual Model

Our conceptual model is drawn from a review of the practice change and implementation science literature. It takes into account the importance of characteristics of the innovation (MVA), dissemination strategies (the MM-TI program), and end users or adopters (program participants). Specific characteristics of the MM-TI dissemination strategy will be described below.

**Characteristics that support or impede practice change.**  
Adapted from Greenhalgh, 2004

*Note: the conceptual model was developed for Washington State; the project is thus called the "RTI-MM" here.*



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The first step of the MM-TI program is to identify and involve key stakeholders as site "champions" of the intervention (champions are on-site individuals who are committed to the success of program <sup>28</sup>).

Site champions will work with program staff to plan and implement the training session. The training may take several forms, depending on the needs, interests, and availability of each site champion and his or her colleagues and staff. One training schedule AAP anticipates utilizing includes an initial didactic presentation session, in the context of grand rounds or lunch meeting. Following the short didactic session, the training team will assess the interest and commitment level at the site and propose a longer, on-site, half-day intervention package for clinicians that includes:

1) didactic content on miscarriage management (medication and office-based surgical management using manual vacuum aspiration (MVA));

2) a hands-on “papaya workshop” to practice MVA technique (participants use MVA equipment on a ripe papaya, which mimics the uterus and allows participants to practice uterine aspiration. The papaya model has the advantages of being low-tech and relatively easy to implement, and permits participants to empty the contents of the uterus (papaya seeds and fruit), which plastic pelvic models do not <sup>36</sup>;

3) a participatory discussion session focused on systems change: “hopes & hesitations” where participants are invited to explore their feelings about miscarriage, managing miscarriage in their settings, and hesitations or perceived barriers to integrating outpatient miscarriage management into their settings.

Depending on the site, key clinical and administrative support staff will be included in the training. Sites will also be asked if they are interested in further training, or training specifically tailored to support staff that includes didactic content on miscarriage management in the outpatient setting and content on and discussion of systems change.

In addition to this standard package, the MM-TI can be tailored to sites’ specific needs (e.g. more hands-on practice if desired; more systems change work if this is identified as a barrier to implementing outpatient miscarriage management). Technical assistance has included sharing protocols, patient education materials and supporting mock clinics.



**Papaya model MVA simulation**

## **Project history**

The MM-TI began in Washington State in July 2008, where it was known as the Family Medicine Residency Training Initiative in Miscarriage Management (RTI-MM). Prior to the start date, the team leader spent considerable time and effort identifying a physician champion for the project, identifying other collaborators – notably the Director of the Family Medicine Residency Network, (FMRN) a formal network of residency programs that share resources and engage in learning and dissemination of best practices—and securing funding.

Funding for 2008-2009 came from the Washington State department of health (DOH) maternal and infant health program (contract #N17270). The scope of the project was defined as the 10 civilian family medicine programs in Washington State, all of whom receive state support. Because sites were identified *a priori*, we were able to hold a “Train the trainer” workshop with self-identified site champions and other representatives from all sites who indicated interest in promoting the success of the RTI-MM. This workshop was held in Fall 2008. The workshop allowed site champions to experience the RTI-MM training model prior to hosting the on-site training. Extra elements included intensive training by Sonosite, the manufacturer of ultrasound machines that were offered to all sites that did not have one and was a large part of the RTI-MM year 1 budget from the state.

Program evaluation was not included in the scope of the Washington State DOH funding; the evaluation of the Washington State RTI-MM was planned and implemented in collaboration with a graduate student who had her own federal traineeship funding source (2007-2009: ARHQ T32 predoctoral training grant HS013853 & 2010-1011: ITHS predoctoral training grant TL1 RR025016). This evaluation work has been leveraged to inform the MM-TI project overall. Dissemination of evaluation results from the RTI-MM years 1 & 2 is underway at scientific conferences and in the literature<sup>37-46</sup>.

The State funding ended unexpectedly after year 1 of the project. Project leadership then approached the Abortion Access Project to develop a grant to complete implementation of the RTI-MM (5 sites remained in year 2).

In year 3, the RTI-MM received funding from both AAP and WA State Dept. of Health (DOH). Work in year 3 focused on intensive, tailored follow-up work with 2 sites to ensure implementation of project goals. AAP also funded expansion of the MM-TI to South Carolina and Oklahoma, states where AAP has other projects underway. Small state-based teams were hired and trained, including a physician champion and trainer and a project coordinator with nursing or public health background, responsible for site recruitment, data collection, support staff trainings, and overall project management. The MM-TI project director, based in Washington state, continues to provide support and guidance to the state-based teams.

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