Telemedicine and medical abortion: dispelling safety myths, with facts

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Provenance: This is an invited Editorial commissioned by Editor-in-Chief Dr. Steven Tucker, MD (Tucker Medical, Singapore).

Comment on: Grossman D, Grindlay K. Safety of medical abortion provided through telemedicine compared with in person. Obstet Gynecol 2017;130:778-82.

Received: 29 November 2017; Accepted: 11 January 2018; Published: 01 February 2018.

doi: 10.21037/mhealth.2018.01.01

View this article at: http://dx.doi.org/10.21037/mhealth.2018.01.01

Telemedicine has widespread implications to improve health for individuals who are restricted by geographic barriers from access to high quality care. Successful utilization of this is exemplified by provision of early medical abortion in the United States. Though research has consistently supported the effectiveness of telemedicine for provision of medical abortion compared to in-person care, concerns about safety have led many states to pass laws prohibiting the use of telemedicine to provide medical abortion (1). Grossman and Grindlay's paper provides compelling evidence that highlights telemedicine provision for medical abortions to be as safe as in-person care (2). This is important to facilitate its integration within healthcare systems.

Abortion is common around the world. Over 30% of females undergo at least one medical or surgical termination of pregnancy (3). Geographic challenges can affect access to abortion, requiring people to travel great distances for services (4). This is particularly challenging for more vulnerable patients, who are often affected by socioeconomic barriers to access equitable, high quality care (5). We know that medical abortion, which involves the use of mifepristone and misoprostol is a safe and highly effective procedure for pregnancies up to 10-weeks gestational age (6-8). There is good evidence to support clinicians' ability to assess patient eligibility, administer care and ensure follow-up through telemedicine programs (9). Findings on medical abortion have demonstrated that clinically significant adverse events are rare (10). To this end, Grossman and Grindlay provide important evidence from their experience in Iowa, that is needed to advance telemedicine provision across the United States and globally. Reporting on findings of 8,765 telemedicine and 10,405 in-person medical abortions performed in Iowa, their analysis demonstrated only 0.18% (95% CI: 0.11–0.29%) clinically significant adverse events in the telemedicine group compared to 0.32% (95% CI: 0.23–0.45%) in the in-person visit group (2). Of note, clinically significant adverse events were defined as: hospital admission; surgery (not including vacuum aspiration of the uterus); blood transfusion; death; and treatment given in the emergency department such as intravenous fluids or oral medication (2). The researchers provide convincing data to support telemedicine as a safe and feasible approach to deliver high quality abortion care.

The provision of in-person medical abortion typically consists of multiple components. The patient will receive counseling and instructions on the procedure. Then an ultrasound or pelvic examination will be done to assess gestational age, and blood work may be arranged. Finally, the medications will be dispensed, and arrangements will be made for follow-up (9). Aspects of this initial visit can be done remotely through telemedicine—for instance, the counselling, diagnosis of pregnancy and dispensing of medications (9). However, concerns regarding certain aspects of the in-person visit such as ultrasound and pelvic examination for gestational age determination

and to rule out ectopic pregnancy, have been expressed by skeptics. Firstly, urine pregnancy tests can be done at home to establish the pregnancy. Similarly, studies have demonstrated that people can reliably date their own pregnancies based on menstrual history alone (11-13). It is also possible that an ultrasound at the patient's local imaging facility may be arranged remotely by her telemedicine provider (14). Furthermore, guidelines on medical abortion by reputable organizations such as the World Health Organization, American College of Obstetricians and Gynaecologists, Society of Obstetricians and Gynaecologists of Canada, and Royal College of Obstetricians and Gynaecologists specifically note that ultrasound to rule out ectopic pregnancy is unnecessary in those without risk factors or symptoms (3,7,15,16).

The approach to use telemedicine for medical abortion varies globally. In Canada, direct-to-consumer telemedicine abortion services were initiated using methotrexate and misoprostol prior to approval of mifepristone (14). The patient would connect with her provider from home and be directed to obtain the necessary investigations. Medications would be either directly mailed to the eligible patients or a prescription sent to the nearest pharmacy, follow-up was arranged remotely (9,14). In Alaska, those seeking medical abortion through telemedicine meet with staff in the clinic locally, have an ultrasound done by a trained technician, blood pressure, height and weight measured by a medical assistant or nurse, receive information about the procedure and complete a consent form (17). A remote physician will review the patient's history and ultrasound images and visit with the patient electronically. Confirmation of the patient's choice and reiteration of the procedure is done (17). The patient receives instructions from the physician about the medications and will receive mifepristone and misoprostol at the satellite clinic. There are variations in how this is done. In Iowa, the remote physician enters a password into her computer that remotely unlocks a drawer in front of the patient (9) and in other programs telepharmacy is used (17). Where observed dosing is required, mifepristone is taken by the patient with the nurse or medical assistant in the room and the physician observes remotely. The patient will then receive instructions on how to: take the misoprostol tablets later; recognize warning signs of a complication; and follow-up to confirm the medications successfully induced an abortion (17). Overall, patients have reported positive experiences with receiving care by telemedicine and most have expressed that they felt it was private and secure (18).

Grossman and Grindlay appropriately designed their study to highlight that telemedicine provision is non-inferior to in-person care. Of the 19,170 medical abortions analyzed, 49 clinically significant adverse events were reported (2). They obtained data from the clinic's practice management database, data reported to Danco Laboratories, the U.S. distributor of mifepristone and they also collected data through surveys among physicians in emergency departments in the state (2). An overall difference in the prevalence of adverse events was 0.13% (95% CI: 0.01–0.28%; P=0.07) with clinically significant adverse events defined as 0.3% among patients with an in-person visit and telemedicine being inferior if the prevalence were 0.6% or higher (2). Although strengths of the design included the high overall rate of information on patient outcomes, the study was limited by the low response rate (35%) of completed surveys from emergency departments. Furthermore, physician recall bias from these surveys may affect the results slightly as the data is self-reported. However, the researchers cite a California paper that found that 0.87% of patients undergoing medical abortion presented within 6 weeks of procedure with an abortion-related complaint and only 0.31% of patients undergoing medical abortion had a major complication, slightly higher rates than in the current study (2). Given telemedicine has potential to address geographic disparities, the researchers did not address the differences between rural and urban settings as particular demographic data was not collected (2). Future research should look specifically at these disparities. The paper mentions that missing data would affect the results as providers themselves may not have been aware of certain adverse events requiring reporting to Planned Parenthood. Despite these limitations it is important to reiterate that the medical abortion complication rates are rare and research to date, including this paper, support its effectiveness and safety.

Iowa is one of two states where the Iowa Supreme Court struck down the decision to restrict medication abortion through telemedicine noting that the restrictions affect the right of residents to access abortion services (1). Facilitation of patient-centered abortion care through telemedicine allows patients to be seen sooner and have greater choice in the abortion procedure type. In Alaska, people living in rural areas have greater access to abortion care due to telemedicine and it has led to more patients choosing a medical abortion at earlier gestational ages (17). Unfortunately, there are 18 states in the United States that have placed a ban on the use of telemedicine for abortion care. Grossman and Grindlay's findings provide data to inform evidence-based health policy to improve medical

abortion provision, and to encourage these states to lift the bans. By reversing these bans, 21 million females living in these states would have access to abortion services (1). These same states are those that have limited supply of skilled abortion providers, and where most services and providers are concentrated in urban areas (1). Both Alaska's and Iowa's experience in the United States has demonstrated that telemedicine programs have been easy to integrate due to the same overall clinic-flow as an in-person visit, including being Health Insurance Portability and Accountability Act (HIPPAA) compliant. Providers and patients highlight many advantages for the utility of this innovative healthcare delivery system as it decreases travel for both patients and providers and improves access in settings where there is a shortage of doctors (18).

Use of innovative approaches like telemedicine for reproductive and sexual healthcare delivery is a rapidly growing area. We have highlighted US and Canadian experiences. However, globally telemedicine has been utilized to provide medical abortion in places where access to care is limited. In Northern Ireland, *Women on Web* based in the Netherlands, is a service that uses telemedicine to provide access where safe abortion care is not available (19). In Ireland, abortion is illegal. Those seeking abortion are forced to continue with an unplanned pregnancy, find the finances to travel out of country or resort to unsafe means (20). *Women on Web* provides early medical abortion up to 10 weeks' gestation via telemedicine. Patients make a request online, a doctor reviews the medical information and provides prescription according to the WHO recommended dose. Support is provided remotely by a multilingual team and patients have the option to share their follow up experience online by email. The medications are mailed to their homes by a partner organisation (20). Unlike *Women on Web*, the United States experience has unnecessary restrictions on dispensing of mifepristone, requiring the patient to swallow the medication in front of a health care professional. This may change, as the restrictions are part of a Prescriber's Agreement that is unenforceable (21). Evidence similar to that presented by Grossman and Grindlay has supported the use of *Women on Web's* direct-to-consumer approach, reporting adverse events as rare and the use of telemedicine as highly favorable amongst those who need access to abortion care (19,20).

Studies exploring the role of mobile technology in reproductive health have demonstrated that mHealth interventions have the potential to deliver "fast, convenient, low-cost and scalable" information and health care (22). To sustain and scale these clinical interventions there is a need for effective coordinated commitment from developers, policy makers, clinicians and consumers (23). Evidence has shown that telemedicine interventions do not compromise quality of care for the expense of providing remote and accessible medical care. Grossman and Grindlay add significant evidence to support this (1,2,16,24). Given this and existing safety data, the possibilities for integration of telemedicine into abortion care is vast.

There is strong evidence to support the use of telemedicine as a reasonable alternative for those who may not otherwise have access to safe, high quality and effective abortion care. High quality telemedicine research, such as this most recent study by Grossman and Grindlay, is key to support evidence-based policy promoting the use of telemedicine to address geographic and other barriers for equitable access to high quality care.

Acknowledgements

During preparation of this article, WV Norman was supported by the Public Health Agency of Canada and the Canadian Institutes of Health Research as a Chair of Applied Public Health Research (CIHR-PHAC, CPP 137903), and as a Scholar of the Michael Smith Foundation of Health Research.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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doi: 10.21037/mhealth.2018.01.01
Cite this article as: Gill R, Norman WV. Telemedicine and medical abortion: dispelling safety myths, with fact. mHealth 2018;4:3.

