Adapting the Abortion Incidence Complications Method to the United States: Measuring the Incidence of Out-of-Facility Abortion Post-*Dobbs*

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Short Abstract

Out-of-facility abortion represents an increasingly important option for pregnant people seeking abortion in the United States after the *Dobbs* decision. However, abortions occurring outside of facility settings are notoriously difficult to measure. In this paper we use a pilot study to assess a medication abortion (MA)-adapted version of the Abortion Incidence Complications Method (AICM), a common indirect method for measuring abortion which employs a multiplier approach to estimate how many abortions occur for every treated abortion complication. We explore three adaptations to the AICM. First, we consider three potential multipliers focused on treatment-seeking, as opposed to complications. Second, drawing on two novel surveys of users and online providers of MA, we compare multipliers estimated from users vs. providers. We assess the stability of the multiplier across respondent demographics, abortion policy environments, and provider types. Third, using historical trends on miscarriage management care from health administrative data, we explore the use of standard facility-based surveys to estimate the share of miscarriage management cases due to out-of-facility abortions. The MA-adapted AICM offers a promising path to estimating the incidence of out-of-facility abortion in the United States, with implications for the measurement of abortion globally in contexts of growing MA use.

Extended Abstract

Introduction

Out-of-facility abortion[1] represents an increasingly important option for pregnant people seeking abortion in the United States after the Supreme Court's June 2022 decision in *Dobbs v. Jackson Women's Health Organization*, which overturned *Roe vs. Wade.* Recent evidence demonstrates that individuals are more frequently ordering abortion pills from an array of online providers operating throughout the country (Aiken et al., 2024). However, current approaches to measuring out-of-facility abortion suffer from several limitations. Much of the available literature focuses on trends in demand for services rather than incidence, exploring requests for or disbursements of medication, and not confirmed abortions (Aiken et al., 2024). Others do address incidence, relying on surveys to identify respondents with a history of self-managed abortion. However, this approach only captures lifetime incidence (Ralph et al., 2024)—as opposed to self-managed abortion within a particular timeframe—and is likely vulnerable to the substantial and well-documented issue of abortion underreporting in surveys (Lindberg et al., 2020); (Desai et al., 2021). There have not yet been any attempts to study the incidence of out-of-facility abortion after *Dobbs* through direct surveys of people pursuing such abortions, or to collect data on a representative sample of out-of-facility abortion users.

We seek to adapt the Abortion Incidence Complications Method (AICM)—one of the most successful methods used to estimate abortion incidence in over 26 restrictive nations (Singh et al., 2019)—to estimate out-of-facility abortions in the United States. Testing of other indirect or social-network based methods to estimate abortion have either failed to improve on low levels of self-reported abortion incidence (Bell & Bishai, 2019) or suffer from sample and selection biases that can result in substantial over-estimation (Giorgio et al., 2021; Sully et al., 2020). In addition to being the current best approach to estimating incidence in restrictive settings, the AICM collects critical public health data on abortion-related complications and treatment, which can be used to inform the health care system's response to the health needs and morbidities associated with unsafe abortions.

Despite these successes, the AICM has been critiqued in recent years for its inability to estimate abortion incidence in a context of increasing use of medication abortion (MA) and lower complication rates from unsafe abortions. Our study makes key adaptations to the AICM to adjust it specifically for measuring out-of-facility abortions in the context of increasing use of MA obtained from online sources; this paper explores the feasibility of these adaptations in generating reliable inputs to the AICM.

First, we test an adapted multiplier input that focuses on treatment-seeking (seeking medical attention for any reason after abortion), as opposed to complications. Individuals obtaining medication abortion online in the United States are likely to experience low rates of complications given the safety profile of MA (Cleland et al., 2013). A larger multiplier (based on a lower proportion of complications) runs the risk

[1] For the purposes of this analysis, we are interested in all abortions occurring in non-facility settings; in the United States, these include medication abortions obtained from online providers (including online clinics which operate under the supervision of a clinician, community support networks, and websites that sell pills), as well as abortion involving unsafe methods.

of generating a much larger potential source of bias (due to the higher scale-up factor). Using a treatment-seeking rate potentially removes this issue in generating the multiplier and decouples the idea of health facility engagement from the safety and outcomes of the abortion. Second, we employ a new approach to generating multiplier data: directly surveying online medication abortion users about their treatment-seeking behaviors. We compare the multiplier generated via this approach to one produced via a survey of online MA providers, which is more comparable to the standard Health Professionals Survey/Key Informant Survey (HPS/KIS) used in the AICM. Finally, we use health administrative data to estimate treated abortions in health facilities, using trend data to estimate the share of all cases due to spontaneous, rather than induced, abortion. Together, these modifications represent a new, MA-adapted approach to the AICM that addresses the method's growing limitations, which could be applied in other restrictive settings where MA ordered online constitutes an increasing share of abortions.

Data Sources

This paper assesses a pilot study designed to 1) generate rates of online medication abortion-related treatment-seeking through direct surveys of online MA users and providers, and 2) develop an estimate of treated abortions in health facilities via health administrative data on miscarriage management care.

Our assessment will rely on the following data sources:

Online Medication Abortion User Pilot Survey

In July 2023, we launched a pilot study of online medication abortion users residing in Florida, Indiana and Louisiana. These states were selected because they represented a diversity of policy environments throughout the study period. A total abortion ban (with limited exceptions) took effect in Indiana in July 2023; a six-week ban took effect in Florida in May 2024; Louisiana banned abortion with limited exceptions throughout the study period. Residents of these states were eligible to complete the survey five weeks or more after taking abortion pills to end a pregnancy. During the first round of fielding (July 2023 – February 2024) individuals in all three states whose abortions took place between May 2023 and December 2023 were eligible to participate. During the second round of fielding (May – October 2024), residents of Florida and Louisiana whose abortions took place between May 2024 and August 2024 were eligible to participate. Respondents were recruited to the study via an email sent by the online provider through which they obtained MA. Recruiting providers included online clinics, community networks, and websites that sell pills listed on Plan C—an online clearinghouse for state-level information on abortion access .

The survey, which asked respondents about their abortion experiences, complications, treatment-seeking behaviors, care needs, abortion preferences, and demographics, was available in English and Spanish and administered through Qualtrics. We supplement our survey data with data from Aid Access, the largest telemedicine provider of medication abortion in the United States, on all residents of our target states who ordered medication from Aid Access during the study period.

As of September 2024, we have received 429 responses, representing a 9.6% response rate among all communications that were sent from online medication abortion providers to their clients. Fielding will conclude in October 2024.

Online Medication Abortion Provider Survey

Since May 2024, we have been fielding a survey of all online medication abortion providers who were listed on the Plan C website in 2023, representing approximately 40 providers thought to capture the vast majority of the online MA orders—and out-of-facility abortion more generally— in the United States. While individuals may obtain out-of-facility abortions via alternative means, including through informal networks, cross-border travel, herbalists and others, these alternative sources likely represent a very small portion of out-of-facility abortions occurring in the country.

The survey asks providers about their national monthly caseloads in 2023, as well as those for Florida, Indiana, and Louisiana, the information and services they provide to their clients, and their assessment of treatment-seeking and complications among their clients after using MA ordered online. The goal of the provider survey is to collect information similar to a standard HPS/KIS survey used for the AICM. However, rather than ask providers about their perceptions on all people who have abortions, we will ask specifically about complications and treatment-seeking among their clients.

Healthcare Cost and Utilization Project Data

To develop an estimate of treated abortions in health facilities, we will use data from the Healthcare Cost and Utilization Project (HCUP) on miscarriage management and post-abortion cases. HCUP is a family of databases derived from hospital administrative data. Specifically, three nationwide datasets will help us to investigate cases across a full range of medical settings: (1) the Nationwide Inpatient Sample (NIS) is a database of hospital inpatient stays; (2) the Nationwide Ambulatory Survey Sample (NASS) is a database of ambulatory surgeries; and (3) the Nationwide Emergency Department Sample (NEDS) is a database of ED visits. Data from these surveys are released annually, approximately 2 years following the end of the data collection year. For the NIS, data is currently available through 2021, while the NEDS and NASS are current to 2020.

Analytic Approach

Using data generated from the above sources, we will test and assess the performance of three specific adaptations to the AICM.

(1) Testing a multiplier focused on treatment-seeking vs. complications

The multiplier input to the AICM, used to adjust the estimated number of treated abortion complications in health facilities, is typically generated based on the proportion of all abortions that result in a treated complication. Increased use of MA means that fewer abortions taking place outside of clinic settings will result in complications. Using the surveys of online MA users and providers, we will estimate three different multipliers derived from: (1) any treatment seeking after out-of-facility MA, (2) treatment seeking for complications, and (3) severe adverse events that required treatment after out-of-facility MA. These three event options range from common to quite rare. A larger multiplier (based on a lower proportion of events) runs the risk of generating a much larger potential source of bias (due to the higher scale-up factor). However, a multiplier based on a more common event, like any treatment-seeking, may be more subject to selection bias, making the estimate more sensitive to the study design and sample. For this reason, a rare but more precisely measured event, such as treated complications or

even severe adverse events, may be preferrable. We compare and assess the size and stability of the three multipliers across respondent demographics, abortion policy environments, and provider types.

(2) Testing a multiplier generated via MA user reported rates vs. provider-estimated rates

The AICM traditionally estimates the multiplier using data from health professionals, who are likely to know about abortions provided in the health system or very unsafe abortions that result in severe complications treated in facilities. A number of new approaches to generating a multiplier have been tested in recent years, including: asking about treated complications among women who self-report an abortion in community-based surveys, using anonymous third-party reporting (ATPR) methods to estimate a multiplier based on close friends (Keogh et al., 2020) and more recently, a respondent driven sample (RDS) of women who have had an abortion (Giorgio et al., 2022). So far, the ATPR and self-reported approaches have not been found to improve on the HPS/KIS approach. While the results from the RDS approach are not yet available, one major challenge to the use of this method is that an RDS is highly localized, and it is unclear whether it can be used to generate a valid national multiplier.

In this study we test novel data sources to generate the multiplier—surveys of online MA users and providers. We will compare the multipliers generated via each approach and assess the user and provider surveys in terms of response rates, selection bias, completeness of responses, and survey administration costs to determine which method results in a more reasonable multiplier input.

(3) Using trends in health administrative data to estimate miscarriage versus abortion-related care

While abortion complications have distinct classifications in medical coding terminologies, research on abortion in restrictive settings indicates that abortion complications and care are often recorded as miscarriages rather than abortions. Aside from people who use the most unsafe abortion methods, resulting in perforated uteri and other severe complications, most abortion cases with complications requiring medical attention are clinically indistinguishable from a miscarriage. As such, we will use multiple years of HCUP data to estimate trends in miscarriage management care cases pre-*Dobbs.*

Miscarriage management and post-abortion care will be estimated using a series of current Procedural Terminology (CPT) and International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) codes. This includes CPT procedural codes 59812 (surgical treatment of an incomplete abortion), 59820 (surgical treatment of a missed abortion), 59830 (surgical treatment of a septic abortion), 59840 (abortion performed by dilation and curettage), and ICD-10-CM diagnostic codes O03 (pregnancy with an abortive outcome, spontaneous abortion), O04 (pregnancy with an abortive outcome, complications following (induced) termination of pregnancy), O07 (pregnancy with an abortive outcome, failed attempted termination of pregnancy) and O02 (pregnancy with an abortive outcome, other abnormal products of conceptions). We also plan to include codes for vaginal bleeding, positive pregnancy tests, and administration of mifepristone/misoprostol to capture all possible classifications of abortion care in health administrative data.

We attempt to use these data to indirectly estimate the annual number of cases attributable to -treatment-seeking after out-of-facility abortion in the United States. First, we examine trends in the

number of miscarriage management cases before the *Dobbs* decision to project the estimated share of total cases likely due to miscarriages after Dobbs. We subtract these estimated miscarriage cases from the annual total along with the estimate of abortion complications due to facility-based abortions, to derive an estimated annual number of complications due to induced abortions obtained within and outside facility-based settings. We then evaluate the success of this approach in identifying facility-treated abortion caseloads, assessing the representativeness of the available sample of miscarriage cases, the completeness of data on relevant diagnostic and procedural codes, and our ability to successfully eliminate cases attributable to miscarriage and facility-based abortion from total caseloads.

Conclusion

Assessment of the three adaptations to the AICM presented in this paper will offer important validation for methods of generating inputs to an adapted AICM. It will inform the nationwide expansion of this study, as well as the work of global practitioners seeking to generate estimates of the growing share of individuals seeking out-of-facility abortion. As demand for out-of-facility abortion continues to grow and account for a larger share of overall abortions in the United States, it is increasingly important to develop and test novel methods, such as this one, for accurately measuring abortion incidence.

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