



Recap of the sixth international symposium on intrauterine devices and systems for women's health^{☆,☆☆}

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ABSTRACT

Due to the COVID-19 pandemic, the Sixth International Symposium on Intrauterine Devices and Systems for Women's Health was held as a series of seven 2-hour webinars between May 28, 2020, and June 22, 2021. This Symposium featured 48 different presenters and moderators covering a wide range of topics to highlight new IUD issues and update general IUD knowledge, just as it was done in previous symposia dating back to 1962 [1–5]. A total of 1346 people attended remotely to observe the events live. In this article, we share summaries of the presentations from the sixth symposium. These summaries, provided by the presenters, are meant to archive the symposium. This article gives the reader an overview of the topics and identifies the sessions' moderators and speakers charged with providing the content. Those interested in further detail, references, and information about the speakers can find more information on the conference website: www.iud2020.com. After the summaries, we share ideas for future IUD research and programmatic needs, as provided by Symposium's presenters and organizers. The authors' summaries are personal opinions and do not necessarily reflect the perspectives of the Symposium's organizers or the medical community at large. The Symposium was recorded and the sessions are available for viewing free of charge at the website, www.iud2020.com or on YouTube. As of July 2022, approximately 1700 visitors have viewed the recordings.

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1. Summaries of symposium presentations

Event 1: May 28, 2020 (Moderators: Tina Raine-Bennett, Carolyn Westhoff)

Brief history of the IUD Symposia: 1962–2006 (Presenter: David Hubacher)

The IUD is currently the world's most widely used form of reversible contraception, with approximately 250 million users worldwide. The first of 6 IUD symposia was in 1962. At each

meeting, scientists shared landmark information on new products, health risks, efficacy, and other topics. IUD use fluctuated tremendously over the past 5 decades in the United States; from a fast rise peaking at 7% prevalence in the early 1970s, to less than 1% use in 1995, to a current all-time high of over 5 million current users and 9% prevalence (14% of all contraceptive use) [6–10].

Event 1, Panel 1: IUD removal

Desire for control over IUD removal (Presenter: Diana Green Foster)

Nearly half of IUD users surveyed say that control over stopping use of a contraceptive is the most important characteristic in choosing a contraceptive device. African American contraceptive users with less secure access to clinicians and health insurance and users with lower trust in providers may particularly like control over stopping. IUDs and implants are cost-effective overall even under real world conditions where some users discontinue prematurely [11,12].

IUD removal access and obstacles

(Presenter: Jennifer Amico)
IUD self-removal can be quick, easy, and painless if strings are graspable, with no evidence of complications. Providers can support self-removal by providing advice and guidance about safe

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techniques and when to seek care as well as resources for family planning post-removal. Evidence from this study suggests that string length should be discussed when IUD is placed to ensure that the user understands the value and limitation of long or short strings so that preferences can be taken into account [13–17].

Event 1, Panel 2: IUD care during COVID-19

IUD care during COVID-19: United States case study (Presenter: Gillian Dean)

Current guidance indicates that due to the prevalence of COVID worldwide, IUD removals should be postponed, when possible, but Planned Parenthood Federation of America removes IUDs when patients request removal. Patient-directed shared decision-making should be employed for when and where to receive care when there is high COVID risk. Tools are available to help guide decisions on when IUD removal can be deferred, when telemedicine should be used, and when an in-person visit is the best option.

IUD services during COVID-19 pandemic: international perspectives (Presenter: Gathari Ndirangu)

Removal is available routinely at health facilities that provide IUDs, as IUD removal is a time-sensitive and essential form of health care. During the current COVID-19 emergency, patients are counseled remotely by phone during which side effects can be discussed and treated if possible, and an in-person clinic visit can be scheduled with preventive measures in place to reduce risk of transmission of COVID-19.

Changes in LARC visits during the COVID-19 public health emergency (Presenter: Michael Policar)

Contraceptive care is an essential health service but must be weighed against the risks of COVID-19 transmission to clinic staff or other patients. LARC provision is one of the few services that can be justified for an in-person visit when case rates of COVID-19 are high or when the prevalence of completed vaccination is low. Follow-up visits can be done via telemedicine, with an in-person visit if the patient reports problems or wishes to change methods. Specific interventions to minimize the risk of viral transmission via aerosolized particles during office procedures were discussed. An abundance of resources regarding providing reproductive health services, both by telemedicine and in-person visits, is available on the Symposium website.

Event 2: September 30, 2020 (Moderators: Tina Raine-Bennett, David Hubacher)

Event 2, Panel 1: Patients first: The importance of centering patients' voices in clinical care and research

What does it mean to center patients for IUD care and research? (Presenter: Jamila Perritt)

Systems must be designed to act at the intersection of inequity. This requires movement beyond a single-issue analysis to a system that considers contexts, examines policies and procedures that reproduce and perpetuate past and current injustices, and grounds our understanding in lived experience of individuals so that we can build strategic coalitions and movements. This allows providers and researchers to align their values with the users of IUDs to ensure that user autonomy is protected.

Patient-centered contraceptive care and IUD access (Presenter: Liza Fuentes)

It is essential that users are centered in the decision to use or discontinue contraception. Reasons why users might consider IUD self-removal as an option include regret, bias, coercion, method dissatisfaction, self-autonomy, and costs. The ability to remove an IUD or have one removed when discontinuation is desired is an essential part of building trust in a patient-provider relationship.

Tools for patient-centered IUD care (Presenter: Christine Dehlendorf)

When considering contraception provision in general, and LARC provision specifically, it is essential to focus on patient-centered care, defined as care that is respectful and responsive to individual

needs, values, and preferences. To accomplish this, providers must not make assumptions about how patients value or prioritize contraceptive effectiveness. Counseling tools that present effectiveness as one, but not necessarily the most important, characteristic influencing method choice can facilitate patient-centered care. Performance measures focused on patient experience of care, including whether individuals felt respected and received appropriate decision support, can also help ensure that providers and systems do not provide directive or coercive care.

Event 2, Panel 2: US and global demographics of IUD Use
Global overview on IUD prevalence, access, trends over time (Presenter: Moazzam Ali)

The global proportion of IUD use is 13%. However, the prevalence in low income and lower middle income countries is 4 to 5%, accounting for 29% and 46% of the modern method mix in low income and lower middle income countries respectively. Access to information about contraceptive methods is low in most sub-Saharan African countries, although availability is surprisingly high in many African countries. According to a WHO survey, IUDs are provided theoretically free of charge in Low- and Middle-Income countries. Key challenges include removing restrictions that prohibit IUD service provision by nurses, midwives, and other paramedical staff, and removing restrictions that prohibit services to nulliparous and adolescent contraceptive users. The issue of bias against IUD provision exists among providers because of the complexity of IUD delivery compared to injectables/implants. However, recent trends towards improved pre-natal care and institutional deliveries offer opportunities for postpartum IUD insertions [18].

IUD use in the United States: trends and characteristics (Presenter: Megan Kavanaugh)

The marked increase in IUD use in the United States that has been documented over the past two decades has been parallel to shifts in method use among the most and moderately effective method groups. Among IUD users in the United States, hormonal options are more popular than the copper IUD, with 73% of IUD users using a hormonal IUD as of 2014. As of 2016, characteristics associated with higher IUD use in the United States include having sought family planning care in the past year, being a college graduate and having given birth. Income levels and race are no longer associated with IUD use [19–22].

IUD usage and devices in China (Presenter: Yan Che)

IUD use accounts for more than 50% of contraceptive use in China. Because of high failure with Stainless Steel Rings (dating back to 1958) China has shifted using copper/medicated hybrid IUD technologies. China has numerous copper IUDs that release indomethacin; the indomethacin reduces menstrual blood loss and other side effects. Since 2001 when China relaxed the strict one-child policy, many IUD users have switched to shorter-acting contraceptive methods.

Event 3: December 9, 2020 (Moderator: Carolyn Westhoff)

Current IUD technology and performance (Presenter: Bimla Schwarz)

Levonorgestrel intrauterine systems (IUS) are more effective than copper IUDs. Challenges finding a clinician trained to place IUDs continue to impede access. Users should be informed of the safety of IUD self-removal [23].

Event 3, Panel 1: Adverse events

Intrauterine devices and the risk of uterine perforation (Presenter: Klaas Heinemann)

The risk of perforation from an IUD (LNG or Cu) is very low, about 2 per 1,000 insertions or lower. Only about 50% of perforations are diagnosed due to symptoms. There is some correlation between risk of perforation and breastfeeding [24–27].

Infections (Presenter: Beatrice Chen)

Sexually transmitted infections, not intrauterine devices, are associated with tubal infertility. Same day sexually transmitted in-

fection screening for IUDs is safe and reduces barriers to IUD use. Since the highest risk of infection after IUD insertion is in the first 20 days after insertion and low thereafter, even in people at increased risk for infection, many patient populations are eligible for IUD use and prophylactic antibiotics are not indicated before IUD insertion, even in those at high risk for infective endocarditis.

Pain and intrauterine devices (Presenter: Rebecca Allen)

Pain on insertion of an IUD is fairly common. Effective tools for pain management include a paracervical block with injected lidocaine to reduce pain for both the tenaculum site and IUD insertion. There is some evidence that applying a lidocaine cream or gel before the procedure can also mitigate pain. Non-pharmacologic interventions such as distraction and a supportive environment can also be helpful. Delayed pain after insertion is uncommon and should prompt an examination for IUD location or, if properly located, other sources of uterine pain. Removal should be offered if desired. IUDs can be effective in managing certain conditions that cause uterine pain such as endometriosis [28,29].

IUDs and bleeding (Presenter: Maureen Baldwin)

LNG-IUD users see a continued improvement in bleeding over the entire duration of use, including with the next IUD, with a steady state reached after approximately 40 days. Amenorrhea is a common side effect of the LNG-IUD, with baseline bleeding and uterine size measured on ultrasound being key predictors. Many users experience increased bleeding and anemia after Cu IUD placement. Initial bleeding amount does not vary significantly by timing of placement post-pregnancy [30].

Common reasons for discontinuation of Cu-IUD and LNG IUS (Presenter: Luis Bahamondes)

The Cu-IUD and the LNG IUS are devices associated with extremely low rates of contraceptive failure, comparable to female permanent contraception. Independently of the kind of IUD in use, bleeding disturbances and pelvic pain are the main reasons for discontinuation. IUD placement in adolescents and insertion performed by non-trained healthcare providers are the main variables associated with device expulsion [31–34].

Event 4: January 27, 2021 (Moderators: Ricky Lu, Kate Rademacher)

Event 4, Panel 1: Programs increasing access in the USA and in lower/middle-income countries

The contraceptive CHOICE project: reducing barriers to long-acting reversible contraception (Presenter: Tessa Madden)

Over the past 15 years there have been significant changes in uptake of IUDs and implants. Removal of patient barriers such as high cost and low information is critical to uptake. Comprehensive contraceptive education is essential to allow patients to make informed and preference-concordant decisions. IUDs have the highest continuation rates of reversible methods [35,36].

The global context of postpartum family planning: the FIGO PPIUD initiative (Presenter: Anita Makins)

Addressing postpartum family planning is vital to bridge the gap of unmet contraceptive need and consequently reduce maternal mortality and improve child survival. The PPIUD (postpartum IUD) is safe and effective and has low expulsion, infection, and perforation rates when correct insertion technique is mastered. Task shifting/sharing is safe and allows the method to be more accessible to contraceptive users, making services more efficient. Having a one stop procedure is invaluable, particularly in lower/middle-income countries and to many people may be life changing. There is little data yet on rates of continued IUD use, but one study in Tanzania shows 86% at 1 year [37,38].

Family planning elevated: increasing contraceptive access in Utah (Presenter: Caitlin Quade)

Family planning elevated is a statewide initiative partnered with safety net clinics across Utah to improve contraceptive access. While removing barriers to IUDs requires extensive provider

training, clinic-level technical assistance, and a robust monitoring system to ensure provision of patient-centered care, these activities are not unique to IUD provision. Indeed, focused technical support is essential for expanding access to all contraceptive methods.

What's next with the hormonal IUS? A global update (Presenter: Kate Rademacher)

First approved for use in 1990, the levonorgestrel-releasing IUS has a nearly 30-year research-to-access gap in low- and middle-income countries. The IUS is not currently available or used at scale in any FP2020 country. This panel brings together several experts with experience in the field [39].

Hormonal IUS access group (Presenters: Tabitha Sripipatana, Anna Hazelwood)

The Hormonal IUS Access Group (recently renamed the Hormonal IUD Access Group) works to sustainably increase access to the hormonal IUD as part of a commitment of access to a broad range of contraceptive methods, by addressing supply security, demand strategies, and updating a prioritized learning agenda. (Update since presentation: In June 2021 the US Agency for International Development (USAID) and the United Nations Population Fund (UNFPA) announced that the hormonal IUD is now added to both agencies' product catalogues, an exciting milestone.) [The content of this summary is the sole responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.]

ICA foundation (Presenter: Jim Sailer)

The International Contraceptive Access Foundation (ICAF) was established in 2003 as a public-private partnership between Bayer and the Population Council with a mission to distribute LNG-IUS at no charge to providers in lower/middle-income countries. Since then, ICAF has distributed over 164,000 LNG-IUS in 37 countries. The Foundation's donations introduced the LNG-IUS in many countries, leading to current efforts to scale up this method in countries like Nigeria, Kenya, and Zambia. ICAF's success has been attributed to the active support of internal program champions, the building of communities of practice within countries, and the flexibility of the Foundation to work with a range of provider types.

Kenya IUD landscape: IUS introduction (Presenter: Susan Ontiri)

Jhpiego supported the Ministry of Health in Kenya to develop a hormonal IUS learning and resource package. Through the support of ICA Foundation, 3 counties were able to introduce hormonal IUS in the public sector. Working with other partners, Jhpiego has created an IUS Community of Practice in Kenya with continued coordination with the Ministry for including hormonal IUS in the method mix. The hormonal IUS has been included in the Health Management Information System. Partnership and coordination have led to additional product licensure.

Event 5: March 3, 2021 (Moderators: Mitch Creinin, Jill Brown)

Event 5, Panel 1: Level 1 evidence validating observational studies

Evidence from a cluster randomized trial (Presenter: Cynthia Harper)

This training intervention increased provider IUD knowledge and skills, and also increased access to the method, without jeopardizing autonomy in contraceptive decision-making. Notably, increased access to IUDs among participants' ages 18 to 25 years did not lead to lower condom use or higher STI rates [40–44].

Not seeking yet trying long-acting reversible contraception: A 24-month randomized trial (Presenter: David Hubacher)

Measures of contraceptive continuation rates and typical use efficacy, as derived from observational studies, are naturally biased due to user factors that are difficult to measure; people seeking short-acting methods may have good experiences and protection from unintended pregnancy if they voluntarily try a long-acting

method like the IUD. This randomized trial showed that contraceptive users not seeking a long-acting method can have typical, satisfying experiences with long-acting products, and have far better protection from unintended pregnancy compared to short-acting alternatives. The trial validates 40 years of observational research that, without highly scientific evidence, simply attributed high continuation rates, satisfaction, and effectiveness to the long-acting technologies [45–48].

Immediate versus delayed IUD insertion following first trimester uterine aspiration: a randomized trial (Presenter: Paula Bednarek)

When immediate IUD insertion is offered at the time of uterine aspiration, compared to delayed insertion 2 or more weeks later, expulsion rate is low and statistically noninferior to delayed insertion. Immediate insertion also results in a higher rate of insertion, a higher rate of use at 6 months, and no increase in the rate of complications [49].

Event 5, Panel 2: Expansive applications for IUDs

Treatment of heavy menstrual bleeding (Presenter: Anita Nelson)

The ability of the LNG-IUS to treat heavy menstrual bleeding (HMB) had a profound impact on the acceptance of IUDs in the US. The LNG-IUS is the most effective medical therapy for idiopathic HMB, and is also important in treating HMB due to adenomyosis and leiomyoma, endometriosis pain, endometrial hyperplasia, and bleeding challenges in many special groups [50].

Do intrauterine devices have a role in cancer prevention? (Presenter: Melissa Natavio)

Based on observational epidemiological studies, it seems possible that IUDs may help prevent endometrial, cervical, and ovarian cancer. Data regarding biological mechanisms specific to cancer types are now needed [51].

Randomized clinical trial assessing pregnancy for IUDs as EC (RAPID EC) (Presenter: David Turok)

The levonorgestrel 52 mg IUD is an effective option for emergency contraception. The low pregnancy risk for both the levonorgestrel 52 mg IUD and copper IUDs for EC combined with additional research supports initiation of these methods any time when a person's urine pregnancy test is negative [52].

Event 6: May 5, 2021 (Moderators: Anita Nelson, Lisa Haddad)

Event 6, Panel 1: Expanding IUD service to adolescent, transgender, and postabortion patients

Contraception for adolescents and young women (Presenter: Stephanie Teal)

It is essential to protect the autonomy of younger patients and make it easy for them to stay non-pregnant. Implants and IUDs are a good choice when effectiveness is a top priority and desired by patients if offered. IUDs are safe, easy to insert, easy to remove, and have few true contraindications [53,54].

IUDs for transmasculine nonbinary and gender expansive persons (Presenter: Jen Hastings)

It is important to create a setting for care that is welcoming and gender-affirming, such as paying attention to pronouns, avoiding gendered language, training all staff on gender-affirming care, and providing all-gender bathrooms. IUDs are a well-accepted birth control option with 12 to 17% of transgender and gender expansive persons choosing an IUD as compared to 10% of cisgender women. Minimizing menstruation symptoms and stopping menstruation altogether were 2 of the top 3 reasons given for using contraception among surveyed transgender and gender-expansive research participants [55,56].

IUD use following abortion care (Presenter: Paula Bednarek)

Patient-centered contraceptive provision is an important part of abortion care. Immediate IUD insertion following abortion is safe in the first and second trimester. Providing patients with

immediate IUD insertion decreases barriers to access, increases contraceptive continuation, and decreases unintended pregnancy [57].

Event 6, Panel 2: Access to IUDs: Real life challenges to bringing evidence to policies and practice

First presenter: Michelle H. Moniz

Policy change is not always implemented as planned. Policies to enhance access to IUDs needs to be rigorously evaluated for effectiveness, equity, and potential unintended consequences. Clinical practice change requires rigorous planning, skilled champions, and evaluation with course corrections as needed. Patient preferences should guide change efforts in contraceptive care delivery [58–67].

Second presenter: Alina Salganicoff

Access to preferred methods of contraception is still a problem for many people. One in 4 low-income female-identified contraceptive users report that they are not using their first choice of contraceptive method and a sizable share say it is because they cannot afford it. Furthermore, less than half of those surveyed reported receiving “excellent care” as measured by 4-item measure of person-centered contraceptive counseling, with lower shares of Black and Latina respondents rating their care as excellent. Many people report good experiences with health care through telehealth and most are comfortable with pharmacists prescribing contraception. Channels outside of traditional clinical settings have the potential to increase access to contraception, but access to high quality counseling and in-person care will still be needed for those who seek LARCs.

Third presenter: Kristina Gemzell Danielsson

LARCs (long-acting reversible contraceptives) are the most effective methods to prevent unwanted pregnancy. IUDs have the highest satisfaction and continuation rates. An intervention package of structured counseling in Sweden, focusing on the effectiveness of contraceptive methods resulted in a higher uptake of LARCs and fewer pregnancies among those recruited at abortion clinics. Telemedicine is a way to increase access to safe, acceptable, and effective abortion care and contraceptive counseling that allows patients increased autonomy [68–72].

Event 7: June 22, 2021 (Moderators: Diana Blithe, Alison Edelman)

Event 7, Panel 1: Emerging technologies

A novel platform design for copper & LNG IUDs (Presenter: David Turok)

Novel copper and levonorgestrel 52 mg IUDs that utilize a novel nickel and titanium IUD frame and share the same inserter platform are progressing toward approval. These IUDs include a narrow inserter, they come preloaded, and have pre-cut strings. The novel copper IUD has less than half the copper of the T380A and has completed phase 3 study enrollment and 1 year of follow up [73].

Concepts for IUD functional integrations to expand applications in women's health (Presenter: Kim A. Woodrow)

A novel prototype for drug integration into the arms of an IUD shows correct positioning and that it is well-tolerated upon transcervical uterine placement. A drug delivery system for HIV prevention is safe, well-tolerated, and can be designed to be long-acting. Questions remain about local and systemic pharmacokinetics and pharmacodynamics, active pharmaceutical ingredient therapeutic index, and delivery of combination agents.

Proof of concept study evaluating a copper intrauterine contraceptive system releasing three different doses of ulipristal acetate (Presenter: Regine Sitruk-Ware on behalf of Vivian Brache)

We conducted a single-blinded, randomized proof-of-concept study to assess bleeding profile, ovarian function, the occurrence of progesterone receptor modulator associated endometrial changes (PAECS), as well as pharmacokinetics and safety profile associated with a novel CuIUS releasing low-dose ulipristal acetate (UPA) for

12 weeks. Users reported decreased bleeding in all doses, but significantly in the higher dose group. All users were satisfied or extremely satisfied with the bleeding patterns. Ovulation occurred regularly in most cycles. Luteinized unruptured follicles were observed more frequently in the higher UPA dose. PAECs were observed in 4 of 9 biopsies taken at the end of 12 weeks of use. No safety concerns were raised regarding liver enzymes and adverse events. The 20 ug/d dose seems the most promising because ovulation was not suppressed, bleeding was decreased, and PAEC was reported in only 1 of 10 biopsies [74,75].

Event 7, Panel 2: Identifying goals for the next 10 years

Reproductive justice: informing contraceptive research (Presenter: Sadia Haider)

We need to acknowledge the fact that the history of family planning includes eugenics and population control as we move towards reproductive justice and equity in contraception care. Patient perspectives must be included in IUD development as patients express that many factors beyond effectiveness that influence method selection and continuation. Principles of reproductive justice are essential to the ethics of research about and provision of contraception.

Updating CDC's contraception guidelines (Presenter: Kathryn M. Curtis)

Updates to any CDC guidelines incorporate guidance from the World Health Organization as well as a continuous review of new research. The process includes determining the scope of the update, updating existing and conducting new systematic reviews, and convening external participants to review evidence and provide individual perspectives on potential recommendations [76,77].

Defining the future research agenda (Presenter: Lisa Haddad)

Research to enhance IUD access and optimize client centered care remains central to the future IUD research agenda. The current research and development pipeline offers opportunity to enhance the benefit of IUDs, reduce side effects and improve user acceptability. Reflection on the past while maintaining perseverance will provide a pathway towards optimizing reproductive healthcare, and specifically maximizing the potential benefits of the IUD, over the next decade.

2. Ideas for future IUD research

Themes from the symposium and thoughts from the experts

Three central themes emerged from the Sixth Symposium that will help guide the IUD agenda for the next decade: IUD Access, Optimizing Client Centered Care, and New Technologies. We summarized these themes below and added quotes from the expert speakers that address their suggested priorities for the next 10 years.

IUD access

IUD use is expanding with increasing use globally and in the US. However, barriers to IUD use and access remain including cost, delays in getting clinical appointments, and providers unwilling to remove IUDs if they did not place them. Key questions we need to address through research:

- **Cost:** Can we make placement and removal easier and reduce costs? Affordability of IUDs is central to improving access. The cost of the device is only a small aspect of the overall costs associated with care. In many healthcare settings placement and removal costs are still high and unaffordable or insurance coverage does not really translate to low or no cost. This is an area where advocacy is imperative and research to demonstrate cost-benefit, a language often more clearly heard by policy makers and insurers, continue to provide the essential evidence to support the service and provision in diverse settings.

- **Reducing barriers to care, telehealth and self removal:** Are individuals more likely to try an IUD if self-removal is feasible? How can we improve self-removal success rates? Current evidence shows only a 20% success rate in self-removal. Can telehealth expand access and remove barriers to care? Offering remote counseling or side-effect management via telehealth may reduce barriers to care and enhance capacity for challenged healthcare systems. Hybrid models with telehealth have been particularly useful during the COVID pandemic. Moving forward, can we use these strategies to expand services and overcome access challenges? Can implementation strategies ensure equity in roll-out for telehealth?

"Our goals over the next ten years are to transition from evidence that supports efficacy to research that supports effectiveness of the LNG 52 mg IUD for EC and to expand the evidence supporting IUD initiation anytime a person wants one and they have a negative urine pregnancy test."

"As we seek to scale up the hormonal IUD in low- and middle-income countries, how we can address provider- and client-side barriers that have historically limited uptake of the copper IUD in much of sub-Saharan Africa? "

- **Training/Expanding and Scaling up services:** Can we expand and sustain distribution channels to increase access in new settings? Training providers for insertion of IUDs in some settings remains a challenge, especially in regions with limited access and overburdened healthcare systems. Testing and improving on alternative training platforms and advancing technologies to simplify insertions can reduce this pressure, but similarly the demand side must be built in parallel to support the growth and maintenance of access.

"To maintain a permanent training and update information to healthcare providers, as well as to medicine and nursing undergraduate students about contraceptive performance, side effects and rare adverse events associated to the use of different kinds of IUDs undoing myths and misconceptions still present among healthcare providers."

"With several countries poised to scale-up the hormonal IUD, we now have an opportunity to ask and hopefully answer key questions, such as: Will introduction of the hormonal IUD increase overall family planning prevalence? Will introduction of the hormonal IUD increase overall IUD use (hormonal and non-hormonal) in lower income countries as seen in the U.S.?"

"Reducing pain at IUD placement is still a very important topic. Immediate IUD insertion post medical abortion in first and second trimester pregnancy. Here is room for improvement. Many settings still require that women come back 2-4 weeks after the abortion and ignore the evidence to support early placement post abortion. Telemedicine/web counseling strategies. Online contraceptive counselling will be increasingly important but also to link to access to in clinic appointments. for LARC placement"

- **Equity:** How can we maintain equity and justice as central tenets in efforts to increase access? How can we ensure balance in the method mix presented to ensure the patient remains at the center of the narrative? Future research must be informed by and inform advocacy to effectively enhance policies to reduce barriers and ensure we are able to maximize access for all eligible populations.

"Over the next ten years of IUD research, I hope we utilize culturally competent research frameworks, diversify our research

teams, are inclusive of diverse research participants, and prioritize the patient perspective in our work.”

“To remove barriers still present in some settings that women faced when they required the removal of an IUD.”

“I would like to see more research that situates IUD use within use of the broader method mix rather than isolating out this one method from all of the others. Especially with regards to understanding access barriers and strategies, there are many synergies in these across methods that may be missed if we focus too narrowly only on one method to the exclusion of others.”

Optimizing client centered care

Stigma and coercion are still perceived by many as highlighted during the symposium: patients feel providers' reluctance to remove an IUD, implicit pressure to continue using, racially based discrimination and disregard of patients' voices. These perceptions can lead to long-term consequences on healthcare mistrust and future contraception non-use. We must integrate our understanding of past experiences and perceptions to address potential and future user needs. Counseling, educating, and recognizing the unique needs of different populations including adolescent and transgender individuals need to be addressed. The research agenda must address questions such as

- Improved counseling and support for the individual: How do we develop tools to ensure we keep the client in the center and improve care? Can counseling tools balance the discussion of effectiveness with other key features that are critical to an individuals' choice method? Can we design better tools to identify, support, and manage side effects? How can we support individuals who may desire to receive care differently or may have different motivations for use besides contraception? How do we reduce provider stigma and perceived coercion? How do we redesign care to support clients better? How can providers and researchers with self-reflection adapt our approaches to reduce stigma and coercion?

“Appropriate counseling to women on contraceptive methods including IUDs will allow them to consider these devices in their contraceptive choices.”

“Further study of the non-contraceptive benefits of IUDs and elucidation of optimal post placental IUD insertion techniques are needed.”

“What are the most successful programs to initiate method adoption?”

“What are the specific factors that lead women to choose LNG-IUS over other methods, and to choose other methods over LNG-IUS?”

- Defining how we measure success in care: How can we measure acceptability, success and improve on it?

“What are the economic and social effects of selection of LNG-IUS vs. other products?”

“Robust efforts to center patient and community voices into any initiatives to enhance access to IUDs.”

“Research into patient-reported outcomes of contraceptive care, including IUD care “

New technologies

Speakers discussed new methods under development including methods with flexible shape-memory nitinol frames, smaller

frames and lower copper loading. There are also newer IUD shapes such as the intrauterine ball and different inserters that can reduce the training requirements for safe use or expand success in settings such as post-partum insertion. Many critical questions need to be addressed with these emerging technologies including:

- New methods: Will new technologies enhance user experience or reduce side effects? Can we improve on safety and reduce costs? Can placements be easier or safer? Many IUDs available globally will never be able to enter the US market – challenged by costs for clinical trials in the US required for FDA approval and no European Medicines Agency reciprocity permitting approval. Many IUDs have been on the market for decades with exceptional safety data. How can we be confident that newer technology developers do not lose momentum before bringing their technologies to all global markets including the US? Current IUDs are safe with high tolerability and continuation – will new methods be able to go beyond non-inferiority to demonstrate superiority? Can the market support IUD expansion and new methods? Will policies provide expanded coverage or support access for new methods that may have slight incremental improvements on prior more cost-effective options? – will insurance coverage limit access to non-generics? Will there be sufficient funding to support these developing technologies?
- New indications: We also have heard encouraging data for expanding the indications for use of the current IUDs, such as LNG IUS as EC. Also, future multipurpose prevention technologies may offer integration of HIV prevention or enhanced bleeding control without androgenic side effects, treatment for endometriosis or fibroids. Will regulatory burdens with multiple indications for Multipurpose Technologies (MPT) IUDs slow progress to the market? Will expanding benefits or additional indications impact interest, uptake, continuation, or access? Are there other indications to explore as MPT IUDs – such as STI prevention or vaginal health?

“Find a non-hormonal or other medicated IUD (i.e. NSAID, UPA) that has fewer adverse menstrual bleeding side effects.”

“In choosing a contraceptive, the IUD probably causes more decision-making angst than all other reversible methods: having to weigh the advantages against possible increases in pain and bleeding is unacceptable. Key challenge for non-hormonal IUDs: maintain high efficacy while eliminating pain and unwelcome bleeding changes.”

“Develop new IUS's with reduced bleeding: The addition of ulipristal acetate (UPA) at a micro-dose level showed promising results. The release may not need to be maintained continuously but possibly for the first few months of use. After emptying the UPA reservoir (calibrated for say 3 to 6 months of use), the Copper IUD would continue its contraceptive action, theoretically without increase in bleeding. These hypotheses warrant further research. Other options to control the bleeding may be either wrapping the IUD with a controlled release membrane to decrease the Copper ions initial release or adding a small dose of an agent able to suppress the endometrial bleeding. Other possible areas of IUD research may be to develop less rigid frameworks.”

“Research into methods of multiple drug delivery so that IUDs can be used as multipurpose prevention technologies for both pregnancy prevention and other indications, such as STI/HIV prevention”.

- Predicting or improving user experience and side-effect management: With advancing technology, we also may soon have new tools to help us improve our counseling and personalize

our care. We know that different individuals have different experiences with use of contraceptive methods. Our counseling is limited based on our inability to predict user experiences with prior studies often relying on insensitive tools for analysis of effect. Can we leverage pharmacogenomic analyses to identify individual genomic variants that may be associated with different side effects? Can metabolomics and transcriptomics help us understand the different responses that may underlie side effects and help us target treatments? With these advancing technologies, can we develop precision medicine tools to personalize contraception management? Can we develop technologies to mitigate side effects and improve the user experience?

“Further investigation into the role of biofilms in recurrent vaginal candidiasis and recurrent bacterial vaginosis, and ways to eradicate or prevent biofilms.”

“How many years after placement of a 52 mg LNG IUC do failure rates approach those seen with typical use of oral contraceptives?”

3. Closing remarks for the sixth international IUD symposium

The Organizing Committee would like to thank all the speakers for their contributions to this successful symposium. We also thank the sponsors for the financial support that made this event possible. The COVID-19 pandemic altered the symposium's format but did not prevent timely IUD issues from being disseminated and discussed.

We hope that the next decade or so will bring new clarity to IUD issues and new information to improve safety, efficacy, and access for this important contraceptive technology. Hopefully the Seventh IUD Symposium will be organized thereafter to share important information.

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