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Provision of intrauterine contraceptive device sizes better suited to younger women based on outcomes at 1 year

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WHY IS CHANGE NEEDED?

Younger-aged intrauterine contraception (IUC) users — adolescents and those in their 20s — often experience higher rates of unwanted effects and discontinuation compared with their older counterparts.[1] This has mainly been attributed to pain and bleeding in the first year of use.[1] Smaller IUC devices are theoretically expected to be associated with less pain and bleeding.[2] However, evidence for smaller-sized (width <30 mm) devices is limited in comparison with standard-sized (width ≥30 mm) devices.

Some IUC providers are aware that smaller IUC devices may be associated with fewer unwanted effects, but a lack of formal guidance may hinder their provision to younger women.

HOW DID WE GO ABOUT IMPLEMENTING CHANGE?

The team embarked on a project to determine which devices currently available in their sexual health service may be better suited to younger women and how these devices could be identified and provided. A systematic review of relevant publications, a local comparative case review, and a secondary analysis of a large subset of existing data were undertaken (Figure 1).[3–5] The large dataset was from the European Active Surveillance Study for Intrauterine Devices (EURAS-IUD study), a multinational prospective cohort study involving more than 30 different IUC device brands.[6]

The systematic review revealed limited evidence investigating different IUC device types in younger women.[3] Single-centre studies reported greater significant differences in continuation and unwanted effects based on device size compared with large multi-centre studies.[3] Of the 130 local cases reviewed at 1 year, twice as many standard-sized (32 mm width) device users had discontinued compared with smaller-sized (23 mm width) device users.[4] Complaints of pain and bleeding were also more than four times commoner in those discontinuing standard-sized compared with smaller-sized devices.[4] The EURAS-IUD study dataset on 5796 copper IUC device users aged <30 years showed higher continuation, fewer unwanted effects, and less costs as a consequence with devices of shorter width (18 mm–<30 mm) and with flexible arms.[5] Following descriptive and comparative analyses, devices with shorter widths (<30 mm) and flexible arms appeared to better suit younger women.

Based on these findings, flow charts were developed (Figure 1) to support both clinicians and patients when deciding on IUC device type.

IMPLEMENTING CHANGE AND OUTCOMES

The following cases illustrate using the flow charts for IUC device provision to younger women in the authors' service. The IUC insertions had been performed by experienced clinicians who ascertained that the IUC devices were correctly positioned at the time of uterine placement.

Case 1

A 25-year-old woman presented requesting replacement of her copper IUC device with a levonorgestrel intrauterine system (IUS). A Mini TT380 slimline (23 mm width) had been inserted 4 weeks previously as emergency contraception. Her menses prior to insertion of the copper device were heavy and painful so she wished to switch to an IUS, although she had thus far experienced no adverse symptoms with the Mini TT380. She had no relevant medical/gynaecological history and had never been pregnant. Examination was unremarkable, uterine sounding length was 6.5 cm, and a Mirena (32 mm width 52 mg IUS) was inserted. The patient immediately complained of lower abdominal pain, which progressively worsened while awaiting transvaginal ultrasound scan (TVUSS) and despite analgesia. TVUSS showed a cavity

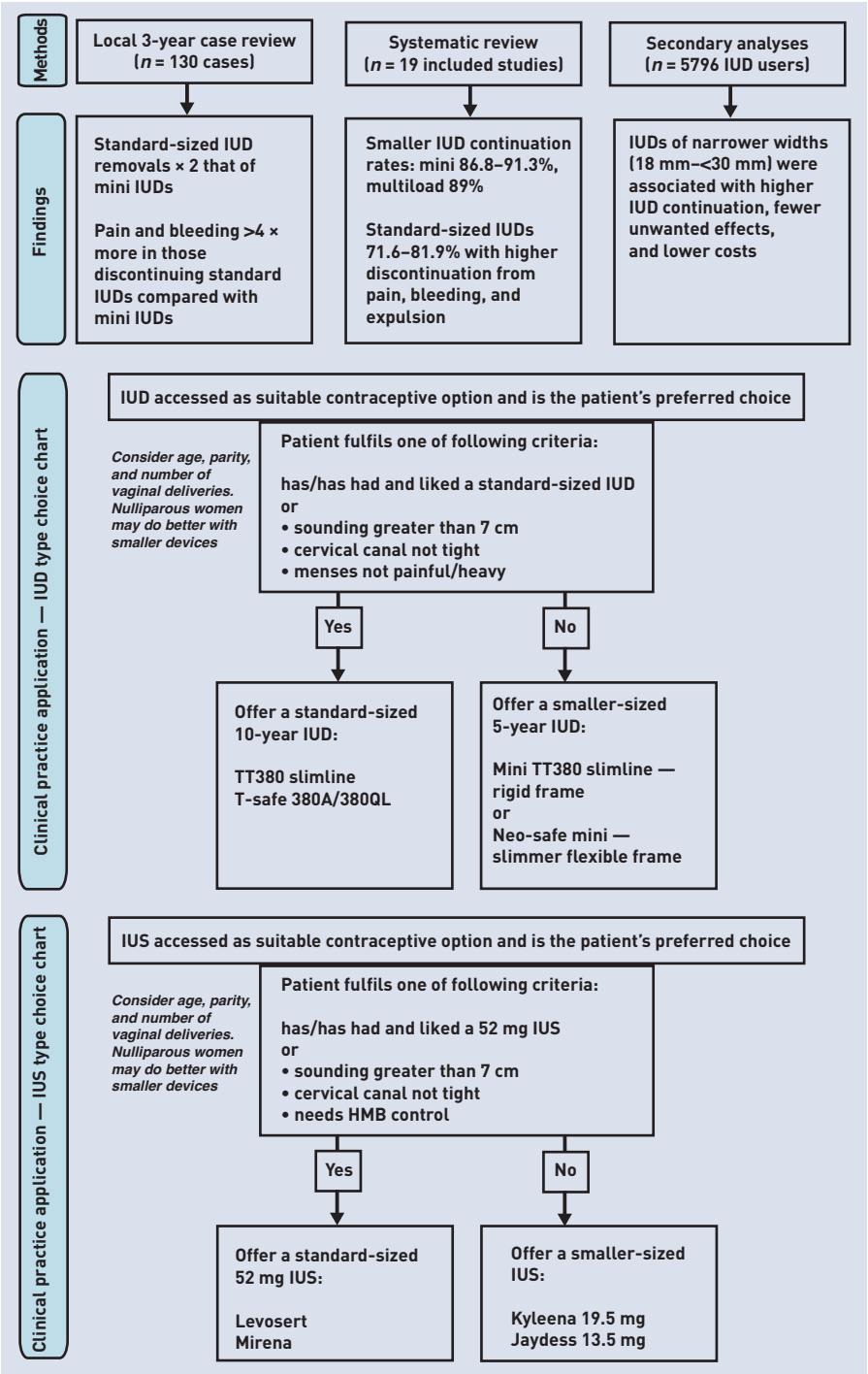

Figure 1. Project summary including charts to support intrauterine contraception device type provision.
HMB = heavy menstrual bleeding. IUD = copper intrauterine device. IUS = levonorgestrel intrauterine system.

width of 33 mm. The Mirena appeared correctly sited but tight in the cavity, measuring 14 mm from the top of the fundus with its base just above the internal cervical os. The arms appeared to be impinging on the internal ostia, suggesting it was too large for the cavity. Using the IUS choice tool, the Mirena was replaced with a Jaydess (28 mm width 13.5 mg IUS) at the patient's request. Her lower abdominal pain settled almost immediately.

The patient returned 3 years later for routine replacement of Jaydess, having been happy and with no pain experienced since its insertion. She chose to try a Kyleena (28 mm width 19.5 mg IUS), and subsequently did not attend, nor report any complaint at phone call follow-up 9 months later.

Case 2

A 21-year old woman presented for routine IUC insertion. She had no relevant medical/gynaecological history and had never been pregnant. Examination was unremarkable; uterine sounding length was 7 cm. A Nova T380 (32 mm width) was inserted. Three hours later, she returned requesting removal for nausea and progressively worsening 'waves' of severe lower abdominal pain that started 30 minutes after device insertion. The pain had not settled despite analgesia. On examination, there was considerable discomfort with marked abdominal tenderness, which was not present prior to or immediately after IUC insertion. Speculum examination was unremarkable with no bleeding, nor evidence of device expulsion. However, upon attempted removal, the Nova T380 appeared low lying and came out easily. The patient recovered promptly, and within 10 minutes her pain had almost completely settled.

She returned 18 months later requesting an IUC. In view of her history and using the IUC choice tool, a smaller-framed Cu-Safe T300 device (23 mm width — the only smaller-sized device available in the service at the time, during the COVID-19 pandemic) was selected and inserted without incident. She has not attended since. A follow-up phone call 13 months later confirmed that she still had the device and had not had any problems.

ADVICE FOR PRACTITIONERS CONSIDERING CHANGE

IUC providers should take an inventory of the devices available in their service, aiming to ensure that each of one smaller (width <30 mm) copper device and IUS are included, which may be better suited to smaller uterine cavities. Clinicians should consider displaying a chart of all IUC devices available in the service with their characteristics. Table 1 shows an example including estimated dimensions. Creating and piloting IUC choice charts could also be useful for clinicians.

Smaller-sized devices should be offered to women who have discontinued use or experienced unwanted effects with standard-sized devices if they are still keen and eligible for IUC. For ongoing pain

Table 1. Common intrauterine contraceptives and their characteristics

Brand	T-Safe CU 380A	T-Safe CU 380A QL	TT380 slimline	Mini TT380 slimline	Nova T380	Neo-Safe T380 Mini	CU-Safe T300	Mirena	Kyleena	Jaydess	Levosert
Active content	Cu 380 mm^2	Cu 380 mm^2	Cu 380 mm^2	Cu 380 mm^2	Cu 380 mm^2	Cu 380 mm^2	Cu 300 mm^2	LNG 52 mg	LNG 19.5 mg	LNG 13.5 mg	LNG 52 mg
Width (mm)	32.0	32.0	29.9	23.2	32.0	24.0	23.2	32.0	28.0	28.0	32.0
Height (mm)	36.0	36.0	33.6	29.1	32.0	30.0	29.4	32.0	30.0	30.0	32.0
Inserter diameter (mm)	4.40	4.75	4.75	4.75	3.60	3.60	3.50	4.40	3.80	3.80	4.80
Licence (years)	10	10	10	5	5	5	5	5	5	3	5

Cu = copper. LNG = levonorgestrel.

after IUC insertion, TVUSS is helpful to confirm the device is correctly sited. Where TVUSS is not available, the authors suggest offering a trial of a smaller device.

Women's personal, peer, and social experiences of IUC affect their choice of this method.[7,8] Taking the size of devices into consideration will further enhance women's IUC satisfaction and continuation. This should also impact positively on their communication to other women considering using IUC for their contraception.[7,8]

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Patient consent

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