Models of care for intrauterine device provision in Australian general practice

Lauren Moloney, Sharon James, Rhea Singh, Danielle Mazza

Background and objective

Intrauterine devices (IUDs) are safe and effective forms of long-acting reversible contraception. However, uptake in Australia is low. Although general practitioners (GPs) manage contraceptive provision, little is known about IUD service delivery. This study aims to describe the models of care (MoC) used in the provision of IUDs by Australian GPs.

Methods

Semistructured telephone interviews were conducted with 20 GP IUD providers nationwide. Data were deidentified, transcribed, thematically analysed and evaluated using The Royal Australian College of General Practitioners' Quality framework for Australian general practice.

Results

Three MoC were described: common, streamlined and same-day insertion. The common model involved three to four appointments but was of the lowest quality. The streamlined MoC had a maximum of two appointments. Few GPs delivered same-day insertion. Task-sharing and adaptable MoC were identified.

Discussion

The quality of current MoC for IUD provision is non-standardised and largely inadequate. Increased GP awareness about and operation of high-quality MoC will enhance IUD access. IN AUSTRALIA, one in four pregnancies is unintended.1 Half of these pregnancies occur in Australian women using contraception at the time of conception;² this suggests issues with patient adherence and/or failures in contraceptive methods of choice.3 Male condoms and the combined oral contraceptive pill are the most common forms of contraception used by Australian women and have typical use failure rates of 9% and 18%, respectively.4 However, intrauterine devices (IUDs) are over 99% effective at preventing pregnancy, with failure rates of between 0.05% and 0.8%.4,5 Despite their efficacy, safety and high patient satisfaction,6 the uptake of IUDs in Australia remains low, with only 6.3% of women using hormonal IUDs (also known as 'intrauterine systems') and even fewer using copper IUDs.7,8 This makes women vulnerable to unwanted pregnancy as they rely on less effective and less reliable contraceptive methods.

General practice is ideally placed to provide and improve access to IUD services as a first-line setting for family planning, the provision of contraceptives and for managing the sexual and reproductive health concerns of Australians. However, there are a limited number of general practitioners (GPs) who are experienced in IUD insertion in Australia,⁹ and those that are might have their contraceptive advice and provision influenced by their personal perceptions, misconceptions and experiences of contraception.10 Practitioner misconceptions influence service delivery by preventing eligible women from obtaining an IUD or delaying insertion. For example, practitioners might delay or extend the IUD journey due to perceptions about performing and awaiting sexually transmissible infection (STI) screening results before insertion, and their own preference in service delivery. Additionally, when consulting with adolescents, some practitioners might be hesitant to offer IUDs due to misperceptions about higher STI risk with IUD use in this demographic.^{11,12} However, international guidance recommends that insertion should not be delayed while awaiting STI test results and screening can occur the day of insertion.¹³ If a positive test result occurs, then treatment can be undertaken without removal of the IUD.13

Clinical and practitioner-based barriers (eg providers' knowledge of the medical eligibility criteria for IUD insertion, a lack of access to IUD insertion training and costs) hinder IUD services.^{14,15} Best practice might be limited by complicated and outdated clinic protocols that prevent the option of same-day insertion.^{16,17} Studies suggest that providers who are educated about long-acting reversible contraception (LARC) misconceptions are more likely to provide same-day LARC services.^{16,18,19} Additionally, when same-day insertion delivery models are provided, women are receptive to this option.^{19,20}

To understand the reasons for the low IUD uptake in Australia, models of care (MoC) must be explored. It is essential when describing MoC to understand the quality of care being delivered. This includes the extent to which current evidence and misconceptions affect service delivery. A summary of best practice for patient access to IUD services is shown in Figure 1, and will inform the quality assessment of the IUD MoC discussed by the study participants. Unlike the clinical areas of mental health and arthritis,1,24 there is little documentation about MoC for GP IUD provision in the literature. Therefore, the aim of this study was to determine and describe the MoC used in the provision of IUDs by Australian GPs.

Methods

We used a qualitative descriptive approach, which is underpinned by pragmatism, to describe participants' experiences. A qualitative descriptive approach can be used to synthesise theories in qualitative research, which can then guide practice.²⁵ The *Quality framework for Australian general practice*²⁶ was a guiding principle to this approach. This conceptual framework has previously been used to describe MoC in the delivery of medical abortion in Australian general practice.²⁷ The framework includes six dimensions to assess the quality of a service provided within general practice (Table 1),²⁸⁻³¹ and informed the present study design, data collection and analysis.

The lead author and interviewer (LM) is a young, female, Bachelor of Biomedical Sciences Honours student. It was possible that her characteristics and past experiences in women's health and general practice might influence data collection, so reflexivity underpinned the research process to minimise bias.

Sampling

Participants were recruited via purposive and convenience sampling methods between June and August 2021. Purposive sampling was used to identify GP IUD providers through, for example, opt-in healthcare directories (eg 1800 My Options [www.1800myoptions.org.au] and HealthEngine [https://healthengine. com.au]); convenience sampling was also used through mechanisms such as social media advertisements, Monash University newsletters, Centre of Research Excellence for Sexual and Reproductive Health for Women in Primary Care and Monash University working groups and snowballing. GPs who currently provide IUD insertions in a general practice setting were included in the study. Those GPs who solely provide IUDs outside of the general practice setting were excluded. No participants withdrew from the study or refused to participate.

Data collection

After 18 participant interviews, no new data were identified. Two subsequent interviews were then undertaken to confirm data saturation. In all, 20 semistructured interviews were conducted one-on-one via telephone by LM with an average interview duration of 40 minutes (range 27–60 minutes). Verbal consent was obtained before interview commencement.

The development of the interview guide was informed by the quality framework²⁶ to ensure questions focused on the quality



Figure 1. Best practice for general practitioner-provided intrauterine device provision services that improve patient access.^{10,14,21-23} STI, sexually transmissible infection.

of service delivery (Appendix 1). Two pilot interviews were undertaken with GP academics, with no modifications required after the pilot interviews. The interview guide included questions about participants' IUD delivery models, how they initiated service delivery, difficulties with being a GP IUD provider and perspectives on how IUD services could be improved. Field notes were made after each interview and transcripts were not returned to participants for comment. No repeat interviews were required. Interviews were transcribed verbatim and deidentified by LM. Data were stored and managed in NVivo 20 (QSR International, Denver, CO, USA). Participants received \$150 gift cards upon completion of the interview.

Data analysis

Data coding was completed by two researchers (LM and RS) using reflexive thematic analysis guided by Braun and Clarke³² (Appendix 2). There are six phases of thematic analysis.³² First, familiarisation occurred naturally via data through data transcription and rereading transcripts. Second, NVivo facilitated code and subcode generation, indicative of notable elements in the data, such as IUD model structure and the dimensions of the quality framework.²⁶ LM and RS coded five transcripts independently and then discussed coding discrepancies to create a final coding scheme, which was used

Table 1 Quality dimension definitions

by LM to code the remaining transcripts. Third, codes were assigned into potential themes, which were then reviewed by all four researchers to assess whether they concurred with the broader data set (Step 4). Codes and subcodes that related to service delivery were accumulated under the IUD service delivery theme and relevant subthemes. Quality dimensions²⁶ were listed against subthemes and used to assess the quality of each component of the MoC and the MoC overall (eg the extent to which appointment numbers of each MoC faciliated or prevented access). Themes were defined and named, and the final analysis and write-up of the report were completed in the form of the student researcher's Honours thesis. This study was approved by the Monash University Human Research Ethics Committee (No. 28928).

Results

Twenty participants from six states were interviewed (Table 2). Interviews ranged in duration from 27 to 60 minutes (mean 40 minutes). Participants mostly identified as women, with a mean age of 38 years, a mean of 6.7 years working as a GP, a mean of 5.4 years providing IUDs and practising mostly in metropolitan areas.

GP MoC for IUD provision

Three models of IUD provision were identified: common, streamlined and same-day insertion models (Figure 2).

Quality dimension	Definition		
Acceptability	Patient is satisfied with the service, and their needs and preferences are met and appropriate to the social context $^{\rm 28,30}$		
Accessibility	Healthcare service is timely and geographically reasonable, appropriate skills and resources are present ²⁸		
Appropriateness	The financial aspects of the service, such as costs to the healthcare provider and the patient, are suitable ^{29,30}		
Effectiveness	The service is guided by evidence-based information and the patient's health is improved ^{28,31}		
Efficiency	The health service is not wasteful of equipment, ideas, supplies or energy ³¹		
Safety	The health service provides the least harm possible to the patient $^{\rm 28,31}$		

Participants also described task-sharing arrangements and model adaptations that facilitated service delivery and flexibility for both providers and patients. Although each participant identified using one main MoC for IUD provision, some operated multiple models concurrently within their practice. Participants also discussed task-sharing arrangements and adaptations to service delivery.

Model 1: Common model (three to four appointment pathways)

The common model (Figure 2A), used by all participants, comprised three to four appointments: one or two pre-insertion consultations, the insertion procedure appointment and one follow-up appointment:

So, it's one consultation, insertion, one follow-up. Some people need two if they have questions or are unsure and that's fine. It's a long consult for the counselling, it's a long consult for the insertion and a short consult for follow-up. (GP3)

Some GPs would try to fit the IUD journey into three appointments. However, it was often necessary to split the pre-insertion consultation over two appointments due to time constraints and to conduct eligibility assessments, resulting in four appointments in total. Some participants indicated that some women might be discouraged by multiple appointments. Therefore, to prevent this, some participants would book longer insertion appointments to perform the pre-insertion assessments on the day.

All but three participants discussed poor Medicare rebates and how this affected their service delivery. Many acknowledged that four appointments might discourage women due to associated costs but that, because of low rebates, more appointments allowed practices to provide a profitable service. Consequently, many described the rebate as, 'terrible' (GP3), 'ridiculous' (GP1, GP5, GP12 and GP17), 'disrespectful' (GP16) and discouraging for current and new providers.

After providing contraceptive counselling, the patient might decide not to have the insertion or be deemed

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Characteristic	Variable	n	%	
Gender identification	Woman	17	85	_
	Man	3	15	_
Age (years)	25-29	n % 17 85 3 15 1 5 13 65 6 30 12 60 6 30 2 10 4 20 3 15 3 15 3 15 2 10 7 35 1 5 7 35 11 55 2 10 8 40 4 20 5 25 3 15	5	_
	30-39	13	65	_
	40-49	6	30	_
Remoteness of practice ^A	Metropolitan	12	60	_
	Inner regional	6	30	_
	Outer regional	n % an 17 85 3 15 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 13 65 14 20 regional 2 10 3 South Wales 4 2 10 South Wales 4 2 10 ia 7 3 15 ania 2 10 10 ia 7 3 15 5 2 11 55 5 2 5 2 4 20 5 25 3 15	10	_
State	New South Wales	4	20	_
	Queensland	3	15	_
	South Australia	3	15	_
	Tasmania	2	10	_
	Victoria	7	35	-
	Western Australia	1	5	-
Years as a registered GP	0-<5	7	35	_
	5-<10	11	55	-
	10-<15	2	10	-
Years as an IUD provider	0-<3	8	40	_
	3-<5	4	20	_
	5-<10	5	25	_
	10+	3	15	_
General practice clinic billing type ^B	Private	7	35	_

Table 2. Demographic characteristics of participants

^ARemoteness of practice was determined using the Health Workforce Locator Tool, with the Australian Standard Geographical Remoteness Areas 2016 classification (www.health.gov.au/resources/apps-andtools/health-workforce-locator/health-workforce-locator).

Bulk billing

Mixed

1-<3

3-<5

5-<10

10 - < 15

4

10

8

5

4

3

20

50

40

25

20

15

^BOne general practitioner (GP) provided intrauterine devices (IUDs) in two separate practices, both within the same suburb but with different billing types.

ineligible, wasting valuable time and being cost-prohibitive for the practice. Participants had different opinions about having additional pre-insertion appointments for investigations for STI checks, blood pregnancy tests, pap smears and internal examinations, and/or to discuss the results of the test and provide further contraceptive counselling. Those in the country (that are) very pressed for time' (GP19) would use telehealth to decrease in-person appointment numbers. In addition, only one GP limited insertion to during menses as they 'follow the guidelines' (GP6). They did, however, acknowledge that because they only insert during menses they had to be 'flexible' (GP6) to not further delay insertion.

Most participants delivered follow-up appointments. The length between insertion and follow-up varied, from two to six weeks, with most participants arranging a follow-up consultation at least four weeks after insertion. For the common model, follow-up was in-clinic with the inserter and not their regular GP or referring practitioner for safety checks and to 'make sure it's all alright' (GP11).

Model 2: Streamlined model (maximum two appointments)

The second most operated approach by GPs, the streamlined model, consisted of a maximum of two appointments with the GP IUD provider (Figure 2B). Patients would be referred to a GP IUD provider for insertion after their pre-insertion consultation and would either have a follow-up appointment with the inserting GP or the GP they initially presented to:

If the other doctors have already spoken to them, then I will just see them for the procedure ... As a follow-up, I want to see them. I prefer them to see me rather than their regular doctor. (GP9)

This model required the involvement of other GPs to minimise appointments with the IUD provider, typically in the form of referral. Both internal (eg other GPs within the participants' clinics) and external (eg local hospitals or family planning centres) referrals were reported. Referrals could increase the number of appointments

No. IUDs inserted per month in

general practice

where duplication of pre-insertion consultations occurred. For follow-up, most participants who got referrals would refer back to the initial GP. One participant explained that this promoted more referrals because the initial doctor would feel more involved in the process and less scared of 'patient poaching' (GP18). However, one participant stated that they always 'prefer (patients) to see (themselves) rather than their regular doctor' (GP9) to make sure all appropriate checks are conducted.

Model 3: Same-day insertion (two or three appointments)

Five participants delivered a same-day insertion service (Figure 2C). This model had two pathways: one where the GP IUD provider has two appointments (a pre-insertion consultation and the insertion procedure) with the patient in one day, and another where the participant delivers the service in one appointment:

If (patients) already have a script from their own doctor and they're certain they want it inserted, they book for a 40-minute appointment with me. So, I can meet them, take their full history,



go through the consent process in addition to inserting the IUD on the same-day. (GP15)

For same-day insertion to be feasible, participants required availability in their schedule for that day, which can be rare. Same-day insertion with a single appointment was more common. This occurred on a case-by-case basis, where some providers would only perform same-day insertion for specific reasons, such as using the copper IUD as emergency contraception or the provider believing the patient was at risk of an unintended pregnancy.

Task-sharing model

Most GPs used task sharing to assist IUD service provision. Task sharing involved other GP providers, non-providing GPs and nurses. Where task sharing occurred, it generally used nurses to assist throughout the procedure, with 11 (55%) participants describing nurse assistance to complete the insertion. Only one participant described a nurse-led MoC. The nurses' scope of practice, as perceived by the participants, included undertaking investigations and examinations, such as pregnancy testing and cervical cancer screening, as well as observations and continuous monitoring, applying local anaesthetic to the patient's cervix, completing patient information and insertion set-up and clean-up. Some participants described limited task-sharing arrangements:

(The nurses) literally just stand at the other end of the bed and squeeze the patient's hand, and that's it. (GP11)

Others described working as a 'team' (GP6, GP16) with the nurse.

Adaptations to IUD service delivery

Participants discussed several adaptations they often made to service delivery (Figure 3). Changes in participants' service delivery were primarily due to COVID-19, newly available research evidence and to suit patients' needs (eg distance from practice and socioeconomic status). COVID-19 caused some participants to move from the common model to a streamlined approach that included pre-insertion telehealth consultation(s), and investigations being conducted on the day of the insertion. This model was facilitated by 'electronic scripts as well because (they) can just send (the patient) the script' (GP14). Another example of telehealth facilitating MoC adaption was using it for pre-insertion consultations, particularly when GPs provided three pre-insertion appointments. This model was typically followed when patients were younger, having their first IUD inserted or



unsure about the insertion and therefore required further counselling.

Follow-up appointments were also moved to telehealth, lengthened to a long consultation, both or dismissed altogether. Longer follow-up consultations were usually for patients who were younger, had concerns or symptoms and/or had their first IUD inserted. Conversely, those who were older, felt confident, had no symptoms and/or had had an IUD before were not 'pushed' (GP14) into attending their follow-up appointment, but were still generally 'encouraged' to attend (GP15).

All but two participants regularly referred their patients to specialists, external organisations and both public and private hospital systems, for difficult or failed insertions. One also did so for sexually inactive patients because the patient could be directly scheduled to see them at the local hospital for insertion under sedation. Although reasons for referral were varied (ie for those wanting sedation or anaesthesia, those with a cervical stenosis, difficult insertions or those who were sexually inactive), participants followed 'the first rule, you need to be safe' (GP4) and patients' preferences.

Discussion

Three models of IUD provision were generally used by participants: common, streamlined and same-day insertion. Participants also described the use of task-sharing arrangements and adapting service delivery to facilitate IUD provision. Both provider and patient factors, such as practitioner preferences and a patient's age and parity, as well as external factors, such as appointment availability and the COVID-19 pandemic, affected which model was used. However, this study also identified that when applying the quality framework,26 Australian GP IUD services do not always prioritise acceptability, accessibility, appropriateness, efficiency and effectiveness.

Most participants used the common model for IUD provision due to the organisation of general practice appointments, where the IUD patient journey is spread over three to four

appointments and where individual appointment times might be shorter. Therefore, this model might be considered high quality for providers. However, it might be of the lowest quality in terms of meeting patients' needs due to the need to attend multiple appointments. Participants indicated that some women are discouraged by multiple appointments, a finding consistent with data from the US, where almost half the women who wanted an IUD after their first consultation did not return for insertion.33 Increasing the quality of IUD MoC will facilitate women's ability to access the service; however, quality is not the only barrier to IUD insertions in Australian general practice. The limited number of GP IUD providers in Australia9 increases the workload of current providers and limits women's access.

Misconceptions surrounding IUD services and limited training availability reduces GPs' ability to learn to and provide IUD insertions.¹⁵ One GP in this study limited insertion to menses. This might be due to misinterpretation of current guidelines provided by The Royal Australian College of General Practitioners (RACGP)³⁴ limiting women's access to 5-12 days of the month.22 In addition, these RACGP guidelines describe the IUD journey in a two- to three-stage process (an initial consultation, which might include insertion, the insertion appointment and follow-up). Other literature and some GPs in this study felt that the need for a follow-up appointment might have little benefit and in some cases could be managed by telephone if needed.²³ Further, additional appointments can burden women with extra out-of-pocket costs, such as those for the appointment/s, travel and time off work, adding to the cost of the device and insertion, acting as a barrier to IUD services.¹⁰ In some countries, such as the UK and Sweden, insertion procedures are free, and devices are free in the UK.35 Overall, participants attributed high out-of-pocket costs due to inadequate Medicare rebates. Due to costs and multiple appointments, the acceptability, accessibility, cost-appropriateness and efficiency of this service are diminished.26 However, recent

changes in funding, and the Medicare Benefit Schedule (MBS) IUD rebate increasing, might help the sustainability and cost-effectiveness of IUD provision.³⁶ Changes in telehealth Medicare item numbers for sexual or reproductive services can decrease in-person appointments for a more streamlined approach,³⁷ such as completing follow-up via telehealth, to enhance patient acceptability, access and efficiency.²³ This flexibility in service delivery supports women's needs, particularly during a pandemic or other life stage demands.

Some participants used a streamlined model via internal referral. These referrals can increase the number of appointments and, although there might be a need for opportunities to ask additional questions and establish rapport prior to the procedure, practitioners should consider conducting this second appointment via telehealth. This option been shown to be feasible and convenient for contraceptive counselling.³⁸ In addition, the introduction (July 2021) of the telehealth Medicare item numbers for the provision of sexual or reproductive health services has enhanced the feasibility of telehealth in Australian general practice.39

Same-day insertion is a high-quality IUD MoC that prioritises acceptability, appropriateness, accessibility and efficiency while being both safe and effective.8 Same-day insertion reduces potential barriers, such as referral, costs associated with multiple appointments, travel and long wait times.10,40 In addition, this model follows best practice by reducing additional appointments, such as for STI checks, which would otherwise deter some women from receiving this service.33 Our data also correspond with Australian literature that referral and long wait times are barriers to IUD uptake.40 Current workforce pressures, time and workplace organisation are potential practitioner obstacles for same-day insertion. However, initiatives such as the 'rapid referral pathways', which can reduce time between service initiation and IUD insertion,⁸ might help.

Few participants described task-sharing arrangements. This MoC could enhance clinic and procedure efficiency. Although most participants used nurse assistance to expedite the insertion, only one participant described a nurse-led MoC. Although the general practice funding model affects nursing scope of practice,⁴¹ both nurse practitioners and registered nurses are well placed to undertake IUD training and provide this care, because procedural outcomes have been found to be comparable to those for GPs.⁴²

A novel finding of the present study was that GPs will regularly swap MoC for IUD provision and adapt them to suit patients' needs and preferences, increasing the acceptability of the service. Practitioners adapting service delivery, particularly during the pandemic, has been observed elsewhere, such as using telehealth for domestic violence support.43 With the minority of our participants providing streamlined, same-day insertion or optional follow-up, increasing the availability of IUD insertion appointments through task sharing or nurse-led or adaptable MoC might generate more acceptability for and efficiency with this service.

Limitations

The recruitment of participants from six states and metropolitan, inner regional and outer regional locations is a strength of the study. In addition, two coders were used to analyse the results, adding further rigour to the results. Reflexivity and self-awareness of personal factors and past experiences with general practice underpinned the research process to minimise bias. Participants were recruited via convenience and purposive methods, not maximum variation sampling, which might have caused data saturation to be reached prematurely. However, the impact of this was mitigated by the variation in participant demographics. A potential limitation of the study was the sample size (n=20) and that we were unsuccessful in recruiting participants from remote locations or from any territories, and therefore might have missed perspectives from this group of GPs. We did not perform member checking and did not triangulate the results, such as conducting telephone interviews with patients or observing participants' IUD service delivery, due to the geographical

dispersion of participants in relation to the research team and the COVID-19 pandemic. Finally, asking providers about the acceptability of the services is only a proxy measure and legitimate acceptability can only be ascertained by interviewing those who receive the service. Therefore, we suggest future research with patients about their preferred GP IUD MoC.

Conclusion

We identified three models for delivering IUD services currently used by Australian GP IUD providers: common, streamlined and same-day insertion. The quality of current models is non-standardised and largely inadequate, preventing uptake and service provision. The common model was most operated; however, it was not of the highest quality, particularly compared with streamlined and same-day insertion models. In addition, operating only one model can be limiting and does not allow for service adaptation, which is often required in general practice. Overall, quality can be improved, with fewer appointments, providers following current best-practice evidence and the prioritisation of patients' preferences. Focusing on operating high-quality models, task sharing and adaptability, access to IUD services in general practice can be enhanced.

Key points

- Informed by the quality dimension framework, current IUD models of care are of a low quality.
- GP IUD models of care with fewer appointment numbers and same-day insertion models are feasible and can increase women's accessibility to this service.
- Practitioners should operate several or adaptable models of care to ensure that they are prioritising both their and their patients' preferences and needs.
- This study focused on GP IUD providers about IUD models of care. However, interviewing patients about their preferred IUD MoC would add weight to this research.

Authors

Lauren Moloney BBiomedSc (Hons), National Health and Medical Research Council (NHMRC) Centre of Excellence (CRE) in Sexual and Reproductive Health for Women in Primary Care (SPHERE), Department of General Practice, Monash University, Melbourne, Vic Sharon James MPH, GradDipOHSN, BN, RN, PhD, Research Fellow, SPHERE CRE, Department of General Practice, Monash University, Melbourne, Vic

Rhea Singh MD, BMedSc (Hons), SPHERE CRE, Department of General Practice, Monash University, Melbourne, Vic

Danielle Mazza AM, MD, MBBS, FRACGP, DRANZCOG, GradDipWH, GAICD, CF, Director, Professor and Head, SPHERE CRE Department of General Practice, Monash University, Melbourne, Vic Competing interests: None.

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Correspondence to:

Immoloney3832@gmail.com

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correspondence ajgp@racgp.org.au