How has contraceptive provision at Family Planning clinics in Aotearoa New Zealand changed between 2009, 2014 and 2019: a cross-sectional analysis

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ABSTRACT


METHODS: National data of 75,825 contraceptive starts of clients at Family Planning clinics in New Zealand in 2009, 2014 and 2019 were analysed to measure changes in contraceptive starts across the three points in time. Data were analysed by age and ethnicity at each point in time, and by deprivation in 2019.

RESULTS: After being adjusted for age and ethnicity, there was a significant decline in the proportion of starts for the combined oral contraceptive pill (43% to 23%), the progestogen-only pill (22% to 13%) and Depo Provera (15% to 12%) from 2009 to 2019. There was a significant increase in the proportion of starts for implants (0.7% to 22%) and intra-uterine contraception (19% to 30%). There were significant differences in contraceptive starts between ethnicities and levels of deprivation.

CONCLUSIONS: There was an overarching trend of increasing long-acting reversible contraceptive (LARC) starts from 2009 to 2019 among Family Planning clients across all age groups and ethnicities. There were also differences in the types of contraceptive starts by ethnicity and deprivation. Information about contraceptive use and changes over time, by age and ethnicity, is essential for evidence-based policy, funding decisions and ensuring equitable access to contraception.

Advances in contraception are recognised as one of the great public health achievements of the twentieth century. But despite its importance, there has been little research in New Zealand about contraceptive use. In 2019, the Ministry of Health published the first national report on contraceptive use since 1999. The 2019 report was based on data collected through the 2014/2015 annual New Zealand Health Survey. That data provide a snapshot of contraceptive use at one point in time but no information about changes over time. The Health Quality & Safety Commission’s Atlas on Healthcare Variation recently reported data on contraceptive provision in 2018/2019. However, the data were incomplete because the report utilised only prescription data, which does not include all available contraceptive methods. Data about the type of contraception used and changes in contraceptive use over time are essential for informing funding and policy decisions, including service provision planning. This is because the type of contraceptive used impacts how services are provided.

There are many types of contraceptives available in New Zealand, but not as many options as are available worldwide. In New Zealand, short-acting contraceptive options include the combined pill (COC) and the progestogen-only pill (POP), which are prescribed for a period of three to six months per prescription, and the injection (Depo Provera), which is delivered by a
health practitioner every three months. Long-acting reversible contraceptive (LARC) options available in New Zealand include the implant (two hormone-releasing rods placed under the skin on the arm); non-hormonal copper intra-uterine device (IUD); and the hormone-releasing intra-uterine system (IUS). All three LARCs must be inserted by a trained health practitioner and replaced every three to ten years depending on the type.

LARCs, especially intrauterine contraception (IUC), have higher continuation rates than shorter-acting methods, indicating that women are likely to be satisfied with them. LARCs are considered first-line contraception for younger and nulliparous women (women who have not given birth). LARCs are highly effective at preventing pregnancy. IUS has therapeutic benefit beyond preventing pregnancy and is also used for treatment of heavy menstrual bleeding and endometrial protection (the prevention of abnormal cellular changes that can progress to endometrial cancer). Although LARCs have higher up-front costs, international research has proven they are highly cost-effective. There is research overseas of increasing LARC use and some investigation of LARC use in New Zealand in the context of abortion, which indicates greater use.

Most primary care providers in New Zealand have been prescribing oral contraceptives in standard consultations for decades, and Depo Provera is also available through most primary care providers. There are fewer primary care providers trained to provide LARCs. Which of these contraceptives are most commonly used has implications for planning how, where and by whom services are provided.

Some barriers to contraception have been identified through New Zealand research. Barriers contribute to inequitable access to a full range.

There are different costs associated with getting contraception in New Zealand depending on the type of contraceptive and the provider. PHARMAC, the national drug purchasing agency, decides which contraceptives are funded. A funded contraceptive is free, except for a $5 pharmacy fee if there is a prescription. A range of funded oral contraceptives, Depo Provera and the IUD have been funded for decades. During the timeframe of this research, PHARMAC began funding the Jadelle contraceptive implant (2010) and the Mirena and Jaydess IUSs (November 2019). Prior to PHARMAC funding these devices, they cost hundreds of dollars and, therefore, were not an affordable contraceptive option for many.

A visit to a health provider for contraception is another cost. Costs of a consultation can vary considerably depending on the provider and the type of contraception. At Family Planning, all appointments for any type of contraception are free for people under age 22, and appointments are always $5 for people who meet government low-income criteria. These clients may still need to pay a $5 fee to collect a prescription from the pharmacy, and some may need to pay a $10 dressing fee for an implant, but there are no other costs. Family Planning clients who do not meet government low-income criteria pay higher fees for a visit, but fees for a contraceptive consultation do not vary by the type of contraceptive started, although sometimes clients may need two visits to get a LARC.

The primary aim of this research was to describe changes in the provision of contraceptive starts to Family Planning clients in 2009, 2014 and 2019, including by age, ethnicity and deprivation. This information is essential to inform funding and policy decisions, such as service provision planning at Family Planning and across primary care.

Methods

Ethics

The New Zealand Health and Disability Ethics Committees (HDEC) was contacted regarding ethical approval. The research project was considered to involve minimal risk given the use of anonymised administrative data and was deemed outside the
scope of the Health and Disability Ethics Committee review (letter 29 October 2019).

Setting

Family Planning is a national not-for-profit organisation operating 23 full-service clinics as well as school and community-based services. Contraceptive provision at Family Planning differs from provision at other health services in New Zealand as Family Planning health practitioners are trained to offer the full range of contraceptive options.

Sample

De-identified administrative data about contraceptive starts provided to Family Planning clients in 2009, 2014 and 2019 were obtained from the patient management system used by Family Planning health practitioners. A contraceptive start was defined as any first supply of an oral contraceptive or Depo Provera (non-LARCs) or any insertion of a LARC.

Data preparation

All contraceptive starts for clients aged 15 and over were included in the dataset. Clients under age 15 were excluded because of small numbers and the high proportion of contraceptives used for other purposes in this age group. Male and female condoms were excluded as a contraceptive start as they are rarely the sole method of contraception provided at Family Planning. The vaginal ring, the contraceptive patch and the diaphragm were also excluded as the numbers were insufficient for analysis. Family Planning does not provide tubal ligation and no longer provides vasectomy. Family Planning did not distinguish between the two intra-uterine contraceptive (IUC) methods in reporting data until 2013. Therefore, it was only possible to disaggregate IUC into IUD and IUS in data analysis of contraceptive starts in 2014 and 2019.

Data were not disaggregated by gender and anyone accessing contraception was included in this research, regardless of their gender identity. Age was grouped into five-year age bands for the analysis. Māori clients were used for the standard (default) population structure to which age was adjusted; ethnicity was prioritised according to Ministry of Health ethnicity data protocols, where individuals who report more than one ethnicity are assigned to one ethnic group based on a priority list. Prioritisation helps ensure that, when individuals are assigned to only one ethnic group, ethnic groups that are a small proportion of a population but a key focus for policy are not overshadowed by larger ethnic groups. For analysis of ethnicity data, modified Stats NZ Tier 1 level categories were used, and European, Middle Eastern/Latin American/African, Other and Residual were aggregated into one category called ‘European/Other’. Clients in the residual category who did not report an ethnicity varied by year with decreasing percentages in 2009, 2014 and 2019 (8.6%, 3.8% and 2.0%, respectively).

Client data were analysed by deprivation quintile using the New Zealand Index of Deprivation 2018 (NZDep2018). NZDep2018 combines nine variables from the 2018 census that reflect eight dimensions of deprivation: communication, income, employment, educational qualifications, social support, home ownership status, living conditions and living space. Quintile 1 is a low-deprivation community and quintile 5 a high-deprivation community.

Previously geocoded address co-ordinates were matched to 2018 census meshblocks so that they could be linked to the NZDep2018 using ArcGIS Pro mapping software. Co-ordinates were removed before a unique identifier was used to link deprivation data to the main Family Planning dataset. Valid geocoded address co-ordinates were only available for 2019.

Analysis

Contraceptive starts for each contraceptive method as a proportion of all starts were calculated for the years 2009, 2014 and 2019 and adjusted for age and ethnicity. Analysis was undertaken to determine effect modification by five-year age bands (15 years to 50+ years), prioritised ethnicity and NZDep2018 deprivation quintiles for the 2019 dataset.

Regression analysis was undertaken in SAS 9.4 using a generalised linear (GLM) model to identify differences in contraceptive use between age groups and ethnicities for the years 2009, 2014 and 2019, as well as across those three years. The regression model adjusted for potential confounding by ethnicity and age. It was not possible to adjust for deprivation quintile as this information was only available for the
2019 dataset. Adjusted rate ratios (aRR) are reported using 95% confidence intervals. The reference group for the rate ratios is the new starts from 2009. Results with p-values of p<0.05 were considered statistically significant.

Results
Contraceptive starts
The number of clients provided with contraceptive starts at Family Planning increased from 2009 to 2014 and again from 2014 to 2019 (Table 1), with an overall increase of 17% from 2009 to 2019. An increasing proportion of Family Planning clients starting contraception were Māori, Pasifika and Asian. Over 55% of clients starting contraception at Family Planning were under age 25, although the proportion of clients under 25 presenting for contraceptive starts declined from 2009 to 2019.

Changes in contraceptive starts
There were statistically significant declines in the proportion of some starts from 2009 to 2019 (Figure 1):
- COC, from 43% to 23% (adjusted rate ratio (aRR) 0.59, 95% CI 0.57–0.60)
- POP, from 22% to 13% (aRR 0.58, 95% CI 0.56–0.61)
- Depo Provera, from 15% to 12% (aRR 0.82, 95% CI 0.78–0.86).

And there were statistically significant increases in the proportion of other starts from 2009 to 2019:
- Implants, from 0.7% to 22% (aRR 29.85, 95% CI 25.59–34.82)
- IUC, from 19% to 30% (aRR 1.45, 95% CI 1.39–1.50).

The greatest increase in implant starts occurred between 2009 and 2014, when they increased from 0.7% to 15% (aRR 20.00, 95% CI 17.13–23.36). There was also a statistically significant increase in IUS starts, from 9% to 15% (aRR 1.60, 95% CI 1.52–1.68), between 2014 and 2019. The small increase in IUD starts over this period was not significant.

Changes in contraceptive starts by age
Table 2 presents LARC starts by age group as a proportion of all contraceptive starts for the years 2009, 2014 and 2019. The (ethnicity-adjusted) rate ratio, calculated using regression analysis, shows the difference in LARC starts between 2009 and 2019. There was a statistically significant increase in LARC starts for all age groups between 2009 and 2019, except for age 50 and over, because numbers were too small for the detection of statistical significance. The increase in the proportion of LARC starts between 2009 and 2019 was greatest in the 15–19 year age group, in which starts increased from 3% to 33% (aRR 13.03, 95% CI 11.31–15.00).

Changes in contraceptive starts by ethnicity
The proportion of COC starts was greater among European/Other and Asian compared to Māori and Pasifika clients across all years (Figure 2). There was a statistically significant reduction in the proportion of starts for COC between 2009 and 2019 among all ethnicities (Figure 2). The greatest reduction was among Pasifika clients (aRR 0.52, 95% CI 0.44–0.61). There was a statistically significant reduction in the proportion of starts for POP between 2009 and 2019 among all ethnicities.

The proportion of Depo Provera starts among Māori and Pasifika clients was greater than European/Other and Asian ethnicities across all years. There was a statistically significant reduction in proportions of starts for Depo Provera between 2009 and 2019 among all ethnicities. Depo Provera starts declined from 26% to 19% among Māori clients (aRR 0.77, 95% CI 0.70–0.85), from 22% to 13% among Pasifika clients (aRR 0.65, 95% CI 0.54–0.78) and from 14% to 11% among European/Other clients (aRR 0.88, 95% CI 0.83–0.94).

There was a statistically significant increase in the proportion of starts for IUC among European/Other clients between 2009 and 2019 from 16% to 33% (aRR 1.76, 95% CI 1.68–1.84), but changes were not statistically significant for Māori or Asian clients. There was a statistically significant reduction in IUC starts for Pasifika clients from 25% to 19% from 2009 to 2019 (aRR 0.65, 95% CI 0.55–0.76).

Between 2014 and 2019 there was only a statistically significant increase in IUD starts among European/Other clients from 14% to 15% (aRR 1.13, 95% CI 1.07–1.19), while IUS starts increased significantly among all ethnicities except Pasifika. IUS starts among
European/Other clients increased from 10% to 18% (aRR 1.65, 95% CI 1.56–1.74), while IUS starts among Māori increased from 6% to 9% (aRR 1.35, 95% CI 1.16–1.58). The proportions of IUS starts among Māori and Pasifika clients were far smaller than for European/Other and Asian clients in 2019.

Between 2009 and 2019 there was a very strong, statistically significant increase in starts for implants among all ethnicities. This was greatest among Pasifika clients, for whom implant starts increased from less than 1% to more than 42% (aRR 74.02, 95% CI 33.14–165.34). The increase for Māori clients was also very large, from less than 1% to 29% (aRR 72.12, 95% CI 42.59–122.11).

Additional data are presented in a supplementary table: the type of contraceptive start as a proportion of all contraceptive starts by ethnicity (age-adjusted), presented as percentages and 95% CIs for three time periods, with rate ratios calculated for 2014:2009, 2019:2014 and 2019:2009.

### Contraceptive starts by deprivation in 2019

Table 3 presents contraceptive starts by contraceptive type as a proportion of all contraceptive starts in 2019 for deprivation quintiles 1 (Q1, least deprived) and 5 (Q5, most deprived). The (ethnicity- and age-adjusted) rate ratio, calculated using regression analysis, shows the difference in

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### Table 1: Contraceptive starts at Family Planning by year and sociodemographic characteristics.

<table>
<thead>
<tr>
<th>Year</th>
<th>2009 (count)</th>
<th>(%)</th>
<th>2014 (count)</th>
<th>(%)</th>
<th>2019 (count)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total new starts</td>
<td>23,125</td>
<td></td>
<td>25,582</td>
<td></td>
<td>27,118</td>
<td></td>
</tr>
<tr>
<td>Age band</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 and under</td>
<td>9,068</td>
<td>39.2</td>
<td>8,430</td>
<td>33.0</td>
<td>8,310</td>
<td>30.6</td>
</tr>
<tr>
<td>20–24</td>
<td>5,477</td>
<td>23.7</td>
<td>6,764</td>
<td>26.4</td>
<td>6,893</td>
<td>25.4</td>
</tr>
<tr>
<td>25–29</td>
<td>3,197</td>
<td>13.8</td>
<td>3,962</td>
<td>15.5</td>
<td>4,455</td>
<td>16.4</td>
</tr>
<tr>
<td>30–34</td>
<td>2,092</td>
<td>9.1</td>
<td>2,563</td>
<td>10.0</td>
<td>3,000</td>
<td>11.1</td>
</tr>
<tr>
<td>35–39</td>
<td>1,692</td>
<td>7.3</td>
<td>1,764</td>
<td>6.9</td>
<td>2,068</td>
<td>7.6</td>
</tr>
<tr>
<td>40–44</td>
<td>1,048</td>
<td>4.5</td>
<td>1,338</td>
<td>5.2</td>
<td>1,428</td>
<td>5.3</td>
</tr>
<tr>
<td>45–49</td>
<td>477</td>
<td>2.1</td>
<td>651</td>
<td>2.5</td>
<td>802</td>
<td>3.0</td>
</tr>
<tr>
<td>50 and over</td>
<td>74</td>
<td>0.3</td>
<td>110</td>
<td>0.4</td>
<td>162</td>
<td>0.6</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Māori</td>
<td>3,347</td>
<td>14.5</td>
<td>4,065</td>
<td>15.9</td>
<td>4,646</td>
<td>17.1</td>
</tr>
<tr>
<td>Pasifika</td>
<td>1,059</td>
<td>4.6</td>
<td>1,327</td>
<td>5.2</td>
<td>1,749</td>
<td>6.5</td>
</tr>
<tr>
<td>Asian</td>
<td>1,559</td>
<td>6.7</td>
<td>2,284</td>
<td>8.9</td>
<td>3,251</td>
<td>12.0</td>
</tr>
<tr>
<td>NZ European/Other</td>
<td>1,7160</td>
<td>74.2</td>
<td>17,906</td>
<td>70.0</td>
<td>17,472</td>
<td>64.4</td>
</tr>
<tr>
<td>NZDep2018 Quintile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (low deprivation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,541</td>
<td>16.8</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,038</td>
<td>18.6</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,471</td>
<td>20.2</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,791</td>
<td>21.4</td>
</tr>
<tr>
<td>5 (high deprivation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,989</td>
<td>22.1</td>
</tr>
<tr>
<td>Not known</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,88</td>
<td>1.1</td>
</tr>
</tbody>
</table>
Table 2: LARC starts by five-year age bands (adjusted for ethnicity) presented a percentage of all contraceptive starts with 95% CIs for three time periods, with rate ratios calculated for 2019:2009.

<table>
<thead>
<tr>
<th>Age group</th>
<th>LARC starts as a percentage of all contraceptive starts</th>
<th>Adjusted rate ratio 2019: 2009 (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25–29</td>
<td>28 (26–30) 45 (43–48) 61 (59–64)</td>
<td>2.15 (1.99–2.31)**</td>
</tr>
<tr>
<td>30–34</td>
<td>40 (37–44) 54 (51–57) 67 (64–71)</td>
<td>1.63 (1.51–1.77)**</td>
</tr>
<tr>
<td>35–39</td>
<td>52 (48–56) 64 (60–69) 75 (70–79)</td>
<td>1.39 (1.28–1.52)**</td>
</tr>
<tr>
<td>40–44</td>
<td>58 (52–64) 67 (62–73) 74 (69–80)</td>
<td>1.28 (1.16–1.41)**</td>
</tr>
<tr>
<td>45–49</td>
<td>55 (45–67) 67 (62–77) 74 (67–82)</td>
<td>1.33 (1.15–1.54)**</td>
</tr>
<tr>
<td>50 and over</td>
<td>49 (32–73) 60 (40–89) 77 (55–100)</td>
<td>1.59 (1.09–2.33)</td>
</tr>
</tbody>
</table>

**p < 0.0001

Figure 1: Percentage of type of contraceptive start, as a proportion of all starts (adjusted for age and ethnicity), for 2009, 2014 and 2019 with 95% CIs.
Figure 2: Percentage of type of contraceptive start, as a proportion of all starts, by ethnicity (adjusted for age) for 2009 and 2019 with 95% CIs.

![Percentage of type of contraceptive start, as a proportion of all starts, by ethnicity (adjusted for age) for 2009 and 2019 with 95% CIs.](image)

Table 3: Contraceptive starts by deprivation quintile (adjusted by age and ethnicity) presented as percentages and 95% CIs for three time periods, with rate ratios calculated for Q1:Q5.

<table>
<thead>
<tr>
<th>Type of contraceptive start as percentage of all contraceptive starts % (95% CI)</th>
<th>Quintile 1 % (95% CI)</th>
<th>Quintile 5 % (95% CI)</th>
<th>Adjusted rate ratio (Q1 : Q5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COC</td>
<td>27 (24–30)</td>
<td>19 (17–21)</td>
<td>1.33 (1.20–1.46)**</td>
</tr>
<tr>
<td>Depo Provera</td>
<td>8 (7–9)</td>
<td>18 (16–20)</td>
<td>0.54 (0.47–0.63)**</td>
</tr>
<tr>
<td>POP</td>
<td>12 (11–14)</td>
<td>14 (13–15)</td>
<td>0.88 (0.77–1.01)</td>
</tr>
<tr>
<td>Implant</td>
<td>18 (16–20)</td>
<td>32 (30–35)</td>
<td>0.74 (0.67–0.83)**</td>
</tr>
<tr>
<td>IUC</td>
<td>37 (34–41)</td>
<td>24 (22–26)</td>
<td>1.37 (1.26–1.49)**</td>
</tr>
<tr>
<td>IUD</td>
<td>16 (14–18)</td>
<td>13 (12–14)</td>
<td>1.13 (1.00–1.28)</td>
</tr>
<tr>
<td>IUS</td>
<td>21 (19–23)</td>
<td>11 (10–12)</td>
<td>1.64 (1.45–1.85)**</td>
</tr>
</tbody>
</table>

**p<0.0001
contraceptive starts between quintiles 1 and 5. Overall, there were differences in contraceptive starts by deprivation quintile in 2019 (Figure 3), with clients in high-deprivation communities having a greater proportion of Depo Provera and implant starts and a lower proportion of COC and IUS starts. The differences between contraceptive starts in deprivation quintiles 1 and 5 were statistically significant for each method of contraception except IUD and POP. There was no statistically significant difference in proportion of LARC versus non-LARC contraceptive starts between any of the deprivation quintiles.

Discussion

The proportions of different contraceptives started by Family Planning clients has changed significantly during the past decade. The increase in contraceptive starts at Family Planning from 2009 to 2019 likely reflects clients shifting to LARCs. There were large increases in LARC starts and a corresponding decline in non-LARC starts. These changes were observed across almost all age groups and ethnicities.

The use of the implant surged between 2009 and 2014, whereas IUC starts increased more steadily across all three years. Disaggregating IUC in 2014 and 2019 showed there was only a statistically significant increase in starts for IUS, not IUD.

The greatest change in contraceptive starts by ethnicity was the increase in implant starts among Māori and Pasifika clients from 2009 to 2019. Proportions of IUS starts increased significantly across all ethnicities except Pasifika from 2014 to 2019, although the rate of increase for Māori was less than for European/Other.

Family Planning clients in all deprivation quintiles accessed LARCs in 2019. However, there were differences between quintiles 1 and 5 in the type of LARCs started. Deprivation data show a strong correlation between deprivation quintile and IUS starts, with a smaller proportion of IUS starts in high-deprivation communities. There were higher proportions of implant starts among clients in high-deprivation areas.

There were differences in contraceptive starts that do not seem to relate to the cost of the device or the consultation. Of interest are the lower proportions of starts of oral contraceptives among Māori and Pasifika and the greater proportions of starts for Depo Provera. These trends were the same among clients in high-deprivation areas.

There are limitations to this research, including the use of contraceptive starts as a measure of changing contraceptive use. This study does not provide any information about continuation rates, so although it explores what contraception was initiated, it is not clear whether clients continued using

Figure 3: Percentage of type of contraceptive start, as a proportion of all starts, by deprivation quintile (adjusted by age and ethnicity) for 2009, 2014 and 2019, with 95% CI.
the method of contraception chosen. International literature provides some guidance and indicates that LARCs have the highest continuation rates. Additionally, every LARC insertion was considered a start, but some may actually have been replacing expired LARCs or an expelled IUC. Nonetheless, the increase in implant use from 2009 to 2014 is likely a true reflection of the increase, as there were so few implants inserted in 2009.

There are a small number of Family Planning clients using contraceptives exclusively for purposes other than preventing pregnancy. It was not practical to access client records to identify and remove these clients from the dataset.

As noted earlier, ethnicity data were not complete, as some Family Planning clients did not report an ethnicity, and these clients were included in the European/Other category. This may have influenced findings. Additionally, this analysis is limited by the use of prioritised ethnicities and only four broad ethnic groups, because these approaches do not reflect the diversity within the categories (eg, the range of Pacific cultures within the Pasifika category) or self-identification with multiple ethnicities.

Despite its limitations, this research provides useful information about changing contraceptive starts at Family Planning clinics and differences by ethnicity and deprivation.

A strength of this research is that at Family Planning, unlike many other healthcare providers, the type of contraceptive start generally does not determine the cost of the consultation, and clients can access the full range of funded contraceptives available. Starting a funded LARC is not necessarily more expensive for the client than starting a funded short-acting method of contraception. There is a $10 dressing fee for some clients starting a LARC and a $5 prescription fee for oral contraceptives and IUS. There are few other differences in costs.

A far greater proportion of Family Planning clients started LARCs in 2014 compared to the Ministry of Health 2014 survey data. Among 20–24 and 25–29-year-olds, LARC starts were 33% and 45% respectively, compared to about 14.5% reported to the Ministry of Health. This likely reflects that Family Planning clients have access to the full range of contraceptives, whereas LARCs are often not available through other primary care providers.

The significant increases in LARC starts at Family Planning is consistent with international and New Zealand research. LARCs are important and valuable options, and this research shows that clients are increasingly choosing them. LARCs offer a ‘fit and forget’ method, which appeals to many people. Although there are greater up-front costs associated with LARCs, in the long term LARCs are cost-effective to health systems and users because they do not require repeat visits for injections or prescriptions and are highly effective contraceptives.

The changes in contraceptive starts at Family Planning provide important policy and funding considerations at the systems level and at the point of care.

This research shows very clearly the impact of PHARMAC funding the implant. This provides strong evidence that the cost of the contraceptive device was a barrier to accessing implants prior to the funding decision.

PHARMAC has only funded IUS for contraception since November 2019. Before then, the device cost $340. The full impact of this funding change cannot yet be detected, due to the timeframe of this research. This research shows higher uptake of IUS in low-deprivation communities, which suggests cost was a barrier to accessing this type of contraception.

Given that cost of the device is a clear driver of observed differences in implant and IUS starts among Family Planning clients, it is worth considering any other costs associated with accessing contraceptives, and how these barriers could be removed, including whether there are any other unfunded methods of contraception that would help meet the contraceptive needs of New Zealanders.

The increase in LARC use has implications for service provision. Any contraceptive start consultation is more complex than one for a repeat of a non-LARC. For example, health practitioners need to take time to discuss all contraceptive options, health impacts and fears about side effects and teach correct use of the contraceptive. LARC starts require longer, procedural consulta-
tions with clients, which includes obtaining written informed consent. The insertion itself takes time and health practitioners need to offer clients options for support for an insertion, such as having a friend or partner, whānau or other staff present. To promote health equity, considerations like health literacy and cultural differences (eg, concerns about exposing one’s body\textsuperscript{21}) must be paramount in the consultation. In 2021, contraceptive provision is more complex than writing a prescription for oral contraceptives.

These findings indicate that cost and access to LARCs are not the only factors impacting differences in contraceptive starts. Other factors could include clinician or client preferences, as well as how services and health practitioners effectively communicate information about contraceptives to all clients in a way that can be understood.\textsuperscript{12,13,21–24} Another factor for Māori could be whānau experiences of contraception. For example, family members share lived experience of Depo Provera or the implant, but not an IUC. If health equity is to be improved, there must be further investigation about differences in contraceptive use by population group, particularly Māori and Pasifika, and also the factors driving differences.

The fact that Family Planning cannot meaningfully compare its contraceptive provision data to other primary care providers indicates that contraceptive data collection and analysis outside of Family Planning has not been prioritised in the health system. Despite that nearly all women will use contraceptives at some point in their lives, there is a significant gap in knowledge about contraceptive provision. This gap means that current policy and funding decisions about contraception provided in primary care are not evidence based and therefore cannot meaningfully improve equity of access.

This research shows that, when they are available and affordable, LARCs will be used by a growing number of people. In order to promote equitable access to the full range of contraceptives, it is important that everyone has the opportunity to use LARCs—alongside all other available methods. Further research about contraceptive provision across primary care should inform policy and funding decisions, including addressing cost barriers to contraception, ensuring appropriate levels of funding for providers specialising in contraceptive provision, such as Family Planning, and comprehensive training for other primary care health providers.

This research shows that there are differences in contraceptive starts by ethnicity and deprivation that cannot be explained simply by cost or access to a provider offering a full range of contraception. What drives these differences in contraceptive decision-making must be explored so that other potential barriers to equitable access to a full range of contraceptive options can be identified and addressed.

**Supplementary material**

- View the supplementary table online.
Competing interests:
Beth Messenger, Amy Beliveau and Mike Clark report they are employees of Family Planning. Beth Messenger also reports she is Chair of the New Zealand College of Sexual and Reproductive Health, and that she was a member of the Ministry of Health National Contraception Guidelines Steering Group.

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