Lessons learnt from the introduction of the contraceptive implant in South Africa

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In 2014, South Africa (SA) introduced the subdermal contraceptive implant with the aim of expanding the contraceptive method mix and availability of long-acting reversible methods in the public sector. Three years on, concerns have been raised about the decline in uptake, early implant removals and challenges in service delivery. This article explores the lessons learnt from the introduction of contraceptive technologies elsewhere and applies these to the SA context. Drawing on the World Health Organization’s conceptual framework for the introduction of new contraceptive methods, and subsequent literature on the topic, lessons are classified into six cross-cutting themes. Recommendations highlight the need for SA to review and explore strategies to strengthen current implant services, including the provision of improved provider training aimed at sensitive, client-centred approaches; increased community engagement; and improved systems for programmatic monitoring and evaluation. With implementation of these recommendations, worrying trends in the provision of implants could be reversed.


This article explores the complexities of introducing new contraceptive technologies and applies these to the initiation of the subdermal contraceptive implant (implant) in the South African (SA) context. Using the World Health Organization (WHO)’s conceptual framework and other emerging literature, lessons are identified and key recommendations proposed.

Over the past decade there have been concerted efforts to promote long-acting reversible contraceptive (LARC) methods in sub-Saharan Africa, especially the implant and the copper intrauterine device (IUD). These methods have high continuation rates compared with other methods and very high effectiveness (<1 unintended pregnancy per 100 women-years). It is estimated that almost 2 million unintended pregnancies could be averted over 5 years if only 20% of women in sub-Saharan Africa, currently using shorter-acting methods (oral contraceptives or injectables), switched to the implant. In this region, the contraceptive method mix has long been dominated by these shorter-acting methods, which, when used correctly, are highly effective and acceptable to women. However, these methods are also associated with significant rates of discontinuation, incorrect use, poor adherence and consequent unintended pregnancy. Similarly, SA’s most commonly used contraceptive methods are the injectables, depot-medroxyprogesterone acetate (DMPA) and norethisterone enanthate (NET-EN), which account for half of contraceptive use nationally.

The implant is registered for use in more than 100 countries worldwide, including many in sub-Saharan Africa, where use has increased rapidly over the past decade. In 5 years, uptake doubled in Malawi, quadrupled in Tanzania, and rose more than 15-fold in Rwanda and Ethiopia. In Zimbabwe, for example, implant use increased from <1% in 1994 to 10% by 2015. In 2014, SA introduced the implant – somewhat later than other countries in the region – in an effort to expand its method mix and especially to increase access to LARC methods, which have been given centre stage in the country’s contraception policy. Aside from the effectiveness of LARC methods and the benefits of increasing method choice, the possible links between injectables (particularly DMPA) and risk of HIV acquisition provided an impetus for the introduction of alternative methods in SA.

The launch of the implant in SA was accompanied by much excitement and anticipation – it was the first new method introduced in the public sector in almost 20 years. Implant services were described as ‘the biggest family planning programme SA has ever seen’ with ≥6 000 healthcare providers trained with regard to implant provision, with a focus on insertion. Both the 5-year, two-rod levonorgestrel implant (Jadelle) and the 3-year, single-rod etonogestrel implant (Implanon NXT) were registered with the SA Medicines Control Council for use, but only Implanon NXT was made available in public health clinics as part of the national contraception programme. Estimates of implant uptake in the year after launch ranged from 176,000, based on data reported to the District Health Information System (DHIS), to as high as 900,000, according to the Department of Health. Data from the subsequent years, however, showed an almost 50% decrease in insertion numbers year on year. The number of insertions dipped considerably across all districts that reported these data.
ability in SA, based mainly on the experiences and insights of the authors, all of whom are closely involved in the SA contraception programme. These lessons are placed in the context of similar experiences of contraceptive introduction elsewhere. We classify these findings into six thematic areas, drawing on a WHO conceptual framework for the introduction of a contraceptive method,\textsuperscript{[1],[2]} as well as subsequent literature on the topic.\textsuperscript{[20­33]} We then propose key steps that could reinforce and reconfigure the implant programme in SA.

**Lessons learnt – six thematic areas**

1. **Learn from the ‘boom-and-bust’ phenomenon in family planning**

   The term ‘boom-and-bust’ in family planning describes the phenomenon in which there is an initial boom in the use of a new contraceptive technology, coupled with excitement and optimism, followed by a rapid downturn due to unmet expectations and disappointment – the ‘failed promise of the contraception revolution’.\textsuperscript{[23]} Several contraceptive methods have had a particularly turbulent history, as summarised in Box 1. Concerns have been raised about the potential for the implant to follow a similar trajectory if lessons from the past are not heeded.\textsuperscript{[15]}

   Importantly, the boom-and-bust phenomenon in family planning can have far-reaching, long-term, negative consequences, creating a climate of mistrust and lack of confidence in a method, or even in family planning services, more broadly. These effects may be experienced many years afterwards – for both providers and consumers – and may result in withdrawal of the method.\textsuperscript{[2]}

   The boom-and-bust concept explicitly acknowledges the importance of closely monitoring the introduction of a new method, and then swiftly recognising and addressing the causes of any downward turn in uptake or acceptability more generally. Accurate data on uptake, pharmacovigilance, and levels of discontinuation or removal and reasons thereof are especially important.

2. **Promote informed choice**

   In the enthusiasm of introducing a new, promising contraceptive method, there may be a tendency to promote that method over others,\textsuperscript{[2],[7],[37]} both programmatically and at the level of individual provider-client interactions. This bias, which may be overt or subtle, may result in the provision of incomplete information and counselling, the over-selling

![Fig. 1. Implant insertions in SA by province (April 2014 - March 2017).\textsuperscript{[26]}](image)

(NO data are available for the Eastern Cape, the Free State, Mpumalanga, North West and the Western Cape before April - June 2015.)

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**Table 1. Contraception methods dispensed, 2013/2014 - 2015/2016\textsuperscript{[26]}**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female condoms</td>
<td>13 254 328</td>
<td>66 271</td>
<td>21 099 517</td>
<td>105 497</td>
</tr>
<tr>
<td>IUD inserted</td>
<td>41 817</td>
<td>167 268</td>
<td>39 168</td>
<td>156 672</td>
</tr>
<tr>
<td>Male condoms</td>
<td>506 431 299</td>
<td>2 532 156</td>
<td>712 387 234</td>
<td>3 561 936</td>
</tr>
<tr>
<td>Medroxyprogesterone enanthate</td>
<td>7 762 721</td>
<td>1 440 680</td>
<td>5 510 430</td>
<td>1 377 607</td>
</tr>
<tr>
<td>Norethisterone enanthate</td>
<td>4 277 194</td>
<td>712 865</td>
<td>3 834 005</td>
<td>639 000</td>
</tr>
<tr>
<td>Oral pill cycles</td>
<td>3 815 539</td>
<td>293 503</td>
<td>3 560 421</td>
<td>273 878</td>
</tr>
<tr>
<td>Sterilisation female</td>
<td>31 551</td>
<td>631 020</td>
<td>32 074</td>
<td>641 480</td>
</tr>
<tr>
<td>Sterilisation male</td>
<td>1 120</td>
<td>11 200</td>
<td>877</td>
<td>8 770</td>
</tr>
<tr>
<td>Subdermal implant inserted</td>
<td>-</td>
<td>-</td>
<td>175 948</td>
<td>527 844</td>
</tr>
</tbody>
</table>

*Subdermal implants for 2015 - 2016 were reported by only four provinces.

IUD = intrauterine device.

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(Table 1, Fig. 1). The Demographic and Health Survey (2016) estimated implant use at 8% for married and sexually active unmarried women.\textsuperscript{[26]} Actual numbers of removals are not known, because these were not initially systematically recorded. However, some reports in the media suggested that early removals were common and that women faced difficulties in getting implants removed because of healthcare-provider resistance to removal.\textsuperscript{[27],[28]} Therefore, while the introduction of the implant heralded an important step towards the strengthening of SA’s contraception programme, and brings the country on par with its regional counterparts in terms of wider uptake, pharmacovigilance, and levels of discontinuation or removal and reasons thereof are especially important.
of the benefit of the new method, a lack of acknowledgment that each contraceptive method comes with advantages and disadvantages, and that the importance of these differ from person to person. Within the early stages of the implant programme in SA, concerns arose that contraceptive users were not being given an adequate choice of methods, with the implant being strongly promoted as the first-line method, and with insufficient counselling about possible side-effects or alternative contraceptive options.

3. Avoid over-emphasis of method technology and technological advantages

A focus on technological advantages of the implant, e.g. its long-term action, high efficacy and cost-effectiveness, may overshadow a woman's personalised experience of the method, especially the impact and tolerability of side-effects. Most importantly, a preoccupation with the long-acting dimensions of the LARCs can result in pre-eminence being given to the continuation rate as the indicator of success and acceptability. If that occurs, then early removal is seen as problematic and even as wasteful, and may generate resistance among healthcare providers to performing early removals. [31]

In SA, an over-emphasis on the notion of ‘3 years of use’ perhaps has meant that the programme did not adequately anticipate and prepare for early removals, as these were viewed as signalling a failure of the programme rather than merely a reflection of the varying needs of women over time, which is to be expected and should be planned for. Implant removals are common across all settings. For example, about a quarter of women discontinued within the first year planned for. Implant removals are common across all settings. For

conceptually, thinking and language need to move away from the notion that the implant is designed to be used for a certain number of years, to the more nuanced message that it can be used for a number of years if women choose to do so. [31,42] Key to improving implant provision is understanding the reasons for early removals, e.g. are these due to inadequate counselling; dissatisfaction with the method; lack of support while using the method, including assistance in dealing with side-effects; or women no longer being sexually active or wanting to become pregnant?

4. Focus on quality standards and overall access, rather than targets for an individual method

Internationally, it is common practice to make contraceptive programmes heavily target driven, and although this is often well intentioned, it may compromise quality of care. [31] An example is target setting for training, which occurred in SA, with a focus on numbers of providers trained, rather than on quality of training and documenting provider proficiency outcomes. The number of devices inserted is also often target driven, and can occur at the expense of oversight of the quality of care provided. [35,43] While there are merits to setting targets, e.g. around overall contraceptive prevalence in a country, indicators need to centre around access, which includes dimensions such as quality of services and client satisfaction, rather than merely uptake.

5. Adoption of innovative, acceptable and comprehensive service-delivery models

Innovative models of service delivery warrant consideration, drawing on experiences from other settings. For example, the use of dedicated, specially trained providers might be more appropriate where new clinical skills, such as implant removals, are difficult to roll out to large numbers of providers. In 2008 - 2009, Zambia trained 18 retired midwives and deployed them to high-volume, public-sector facilities, solely for the provision of LARC services over 14 months, which showed a marked increase in uptake over a short period of time. [14,44]

A key challenge for implant service delivery is getting the balance right in relation to training on insertions and removals. The pattern of introducing implants and focusing training on insertions and not...
on removals, has repeated itself across countries.\textsuperscript{14,16} This approach is based on the assumption that there would be a window of several years in which to do this training. Also, practically, it is difficult for healthcare providers to learn how to perform removals at the onset of a programme, when few insertions have been made. Often, there is intent to do training on removals, but once the implant is introduced the momentum for training dissipates. Clearly, access to quality removal services from the onset of an implant programme is essential. Many countries have underestimated the number of women who would request removals before 3 years.\textsuperscript{14,15} Failure to provide accessible removal services is an infringement of women’s rights, and may impact negatively on the community’s perception of the implant.

Expanding the choice of contraceptive methods does not necessarily result in increased utilisation if constraints in the health system and the needs of the end user are not taken into account.\textsuperscript{12,16} A holistic perspective is called for, tailored to the social, cultural, and personal perspective is called for, tailored to the social, cultural, and personal and technical assistance agencies could all make an important contribution to such efforts.

6. Ensure a rights-based approach

The abovementioned lessons draw together important strands, which locate the promotion of the implant within the context of sexual and reproductive health and rights.\textsuperscript{13,14,57} A rights-based approach is especially important given that, historically, family planning programmes in SA have been associated with coercion.\textsuperscript{62,63}

Most importantly, services must take into account the gamut of social, cultural and relational factors that influence contraceptive uptake and continued use. Each new method carries a set of trade-offs for healthcare systems, providers and end users that will influence acceptability and continued use.\textsuperscript{12} Therefore, options-based, rather than directive counselling, is required, so that the implant is not recommended above other methods. Effectiveness is only one of many criteria that determine the optimum method for a woman at a particular point in time, and other factors may guide her choice, including how frequently she has sex, her partner’s involvement, her fertility desires, and cultural or personal issues relating to side-effects. Sensitivity and attention to these dimensions ensure that clients are informed and have agency regarding method selection, and continuing or discontinuing use.

Recommendations

Based on the lessons described above, we propose the following priority recommendations to support SA’s implant programme:

**Capacity building for healthcare providers**
- The expanded provision of new and refresher training courses for healthcare providers, which cover technical skills around insertion and removal, informed decision-making and choice for women, pre-insertion counselling, especially around side-effects, and long-term support and management of side-effects.
- Capacity building needs to strengthen provider confidence and competence in insertions and removals, recognising that this requires an investment in quality training, effective supervision, structured mentorship and accessible on-site support.
- Training and support need to include more nuanced counselling, which should address issues such as changes in bleeding patterns and how this may affect women’s lives, e.g. the cost of sanitary wear and sexual relationships. Reassurance and competent management of side-effects play a major role in determining whether a woman chooses to continue the method.
- A skills and human resource assessment needs to be done, especially in relation to implant removals, and measures should be put in place to address gaps.
- Training needs to focus on the most recent WHO medical eligibility criteria guidance for the implant, in particular the suitability of implants for women of all ages, including adolescents, and highlight potential advantages of the method for this group.

**Clear communication to healthcare providers and end users regarding drug interactions**
- Clear communication needs to be provided for both healthcare providers and end users where drug interactions might be a potential problem, including for those on treatment for tuberculosis (TB), HIV or epilepsy.\textsuperscript{64,65} In the presence of ambiguity, healthcare providers understandably err on the side of caution, either not offering implants to potentially eligible women or unnecessarily encouraging removal.

**Data collection and monitoring systems**
- Address data gaps in recording of uptake, removals and pharmacovigilance, including use of the implant in women with medical conditions such as epilepsy, HIV and TB.
- Disaggregate implant data by age (especially to identify use among adolescents and young women) and by specific groups of women, such as postpartum and post-abortion patients. This can then be used to identify gaps in provision, training, quality of care, and factors influencing uptake and continuation.

**Increase demand**
- Adopt innovative service-delivery models, which could include ‘re-introducing’ the implant (and other LARC methods, such as the IUD) in selected districts; engage with communities in terms of myths, misconceptions and women’s experiences with the method; and debrief healthcare providers about their experiences with the method and their concerns.

**Assess the feasibility of further expanding the contraceptives available in the public sector**
- Contraceptive use may be increased by expanding the range of methods available to accommodate different needs.\textsuperscript{63} The SA contraception policy recommended a 5-yearly review (2012 - 2017).\textsuperscript{17,62} This is now imminent and presents a window of opportunity to review the guidelines. More specifically, based on the concerns raised in this article, the review should consider uptake of and barriers to the use of all methods. With the emergence of new data, further consideration should be given to different contraceptives among women at risk of HIV and those
infected with HIV or TB, including guidance on contraceptive prescribing and drug interactions.

Conclusion

Problems and challenges encountered during the introduction phase of the contraceptive implant in SA are not unique, and mirror experiences elsewhere. Lessons learnt elsewhere provide valuable insights about the health-system elements required to support service provision and demand creation, as well as ensuring that these take place within a right-based framework. It is critical to heed these lessons, identify and analyse problems and deal with them effectively to ensure success of implant introduction.

Real or perceived concerns about new methods, such as the implant, may discredit the use of methods by current and potential users, communities and healthcare providers. It is imperative that the potential contribution of the implant to women’s health in SA is not undermined by unsubstantiated negative publicity and misconceptions, or by the unwarranted importance assigned to research supported by data.

Addressing the skewed contraceptive method mix in SA and promoting a greater choice of methods, including the implant, require nuanced provider training and sensitivity, novel health-system support, intensive community engagement, consumer awareness, and systems for programmatic monitoring, evaluation and quality improvement. While this article specifically addresses issues relating to implants, many of these reflections may apply to the strengthening of other LARC methods, such as the IUD, and indeed, the contraceptive programme as a whole.

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