

Accelerating PMTCT outcomes: A case study from South Africa

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The PMTCT Accelerated Plan (A-Plan), an intensive health systems improvement plan, played a role in the significant reduction in rates of mother-to-child transmission of HIV in South Africa – from 12% nationally in 2007 to less than 5% in 2011.

This case study explains the A-Plan's approach, its critical success factors and broader lessons learned for strengthening PMTCT services.

High level political leadership, strong project management and coordination are critical factors. A phased approach to scaling up coverage, quality and uptake of services can be successful if pilot initiatives are designed to be integrated into national programmes from the outset. Investing in understanding the programme's objectives, building commitment and partnerships, and ensuring alignment with national programme objectives at all levels can facilitate the successful scale up of complex programmes.



1. Introduction

South Africa scaled up its national prevention of mother-to-child transmission of HIV (PMTCT) programme and achieved the ambitious target to reduce mother-to-child transmission from 12% in 2007 to less than 5% by 2011. According to a review of progress documented in the draft National Strategic Plan 2012-2016, in 2010 PMTCT services were available at 95% of public primary health care facilities and mother-to-child transmission at six weeks had been reduced to 3.5%.

The PMTCT Accelerated Plan (A-Plan) contributed to this achievement. An intensive health systems improvement plan coordinated between the government, development partners, NGOs and health workers, it used a two pronged approach:

- raising the quality and coverage of PMTCT services, and
- implementing social mobilisation strategies to promote better understanding, demand and uptake of services by pregnant women.

Lessons from pilot implementation in six districts informed scale up to 18 further districts, and eventually nationwide.¹ This case study explains the A-Plan's approach during its pilot phase, critical success factors and broader lessons learned for strengthening nationwide PMTCT services.

2. Context: South Africa's national PMTCT programme

In 2009 South Africa had the highest number of people living with HIV in the world, with an estimated 5.6 million adults and children living with HIV (UNAIDS 2009). AIDS was one of the leading causes of death in women and children, accounting for 43.7% of maternal deaths and 35% of under-five deaths.² Implementing an effective, comprehensive and integrated national PMTCT programme had the potential to substantially improve adult, maternal, infant and child health outcomes through:

- Reducing new paediatric HIV infections
- Preventing new HIV infections in women and their male partners with prevention approaches targeted to their infection status
- Preventing unintended pregnancy among HIV-positive women; and
- Building capacity for health systems through training of health workers, improved laboratory, data and monitoring and evaluation systems.

PMTCT service scale up and utilisation had increased substantially since the initiation of the national programme in 2002. PMTCT was universally available in public primary health clinics, and the National Strategic Plan target of 95% coverage in public sector antenatal service sites achieved in 2008. National PMTCT guidelines had been revised and strengthened, and included the dual therapy regimen, nevirapine and AZT. Since April 2010, women could start on the HIV prophylaxis regimen as of 14 weeks, further reducing the transmission of HIV from mother to child.

Studies have shown that scaling up PMTCT services and coverage has challenged many countries due to weak health systems, inadequate integration into maternal and child health (MCH) services, limited human resources and supplies, low levels of male involvement and weak community mobilisation. Programme evaluations from African countries have also found deficiencies in components of the PMTCT clinical pathway, including uptake of antenatal HIV testing, receipt of test results, uptake of ARV prophylaxis and poor postnatal mother-infant follow up.³

South Africa also faced challenges in scaling up its programme. For example, while HIV testing had reached 69% in 2006/2007, a third of HIV-positive women were not receiving nevirapine despite high national antenatal coverage (above 90%) and births assisted by trained health personnel (84%).⁴

¹ In 2009 the pilot was supported by the DFID-funded Rapid Response Health Fund, managed by HLSP. From 2010 the DFID-funded SARRAH Programme continued supporting implementation.

² Saving Mothers 2005-2007: Fourth Report on Confidential Enquiries into Maternal Deaths in South Africa. National Department of Health, 2008.

³ Doherty T et al (2009) Improving the coverage of the PMTCT programme through a participatory quality improvement intervention in South Africa. BMC Public Health 9:406.

⁴ Doherty et al (2009).

Accelerating PMTCT outcomes in South Africa

Box 1 summarises the health systems challenges identified through district level assessments conducted as part of the A-Plan.

Box 1: Key strategic and operational challenges to PMTCT programme effectiveness in South Africa

- Fragmented policy and programme management structures at national to district levels, hindering the provision of integrated and better coordinated HIV services within MCH care.
- Poor integration of HIV management with sexual and reproductive health and child health services, and poor linkages with related services, e.g. the referral and fast tracking of pregnant women and HIV-positive infants to the provision of anti-retroviral therapy (ART).
- Missed opportunities to provide comprehensive care within facilities despite high utilisation rates, e.g. not testing all pregnant women for HIV during antenatal care, late antenatal bookings, inadequate levels of CD4 testing, weak follow up of mothers and infants requiring postnatal PMTCT services.
- Poor monitoring, evaluation and reporting exacerbated by poor data management and a weak health information system.
- An overburdened health system with significant staff shortages, weak capacity and understanding of PMTCT guidelines, poor supervision and lack of on-site mentorship/support.
- Poor information and/or campaigns on primary HIV prevention, prevention of pregnancy, use of condoms and poor awareness (or demand from communities) of available services and their benefits.

3. The PMTCT Accelerated Plan (A-Plan)

In 2008, the South African Government, national and international PMTCT partners devised a time-bound (18-24 months) health systems intervention – the A-Plan – to contribute to achieving the country's ten point plan for health improvement and the health Millennium Development Goals. The aim was to accelerate coverage and uptake of PMTCT services in six (increasing to 18) poor performing districts, and to understand, and address programme and health system bottlenecks at service delivery level which constrained the achievement of national PMTCT targets

The A-Plan consisted of three phases:

1. Pilot: implementation in six priority districts (May-November 2009).
2. Scale up to 18 further districts (January 2010-June 2011).
3. Integration into the broader national PMTCT Operational Plan, covering all 52 districts (July 2011-December 2012).

The pilot phase was managed as a project, supported financially and technically by a partnership comprising the National Department of Health (NDoH), the South African National AIDS Council, DFID, USAID/PEPFAR, UNICEF, health district teams and several NGO partners.

Key features and methodology

The A-Plan had two important features:

- **Coordination and integration** of government and external partner resources at district and sub-district level through integrated work plans. For example in phase 2, PEPFAR, the primary donor funding the majority of the local partners at district and facility level, agreed with DFID and the NDoH to map and review respective work plans, and to align them to national objectives and support the scale up to phase 2 and beyond.
- The use of **existing policy, protocols, and implementation structures**. The A Plan was designed to use existing health workers as change agents working alongside quality improvement mentors to ensure skills were transferred.

As discussed in section 4 of this paper, these features were important contributors to the A-Plan's success.

The A-Plan's methodology was characterised by:

- The use of **routine data** to identify problems in PMTCT services, to set targets and monitor progress; and
- Known, effective intervention strategies in **quality improvement** and **social mobilisation**.

Implementation was preceded by advocacy directed at national, provincial and district level stakeholders to introduce the A-Plan and its national management team, and to gain sub-national commitment to implementation. This was followed by a district assessment (two days per district) to determine the status of the PMTCT programme, and by an assessment of data management, gathering of baseline data against eleven A-Plan indicators and a bottleneck and gap analysis. Formative research was undertaken to determine social barriers to care and to inform the design of the social mobilisation framework and subsequent interventions. Then planning, implementation and monitoring started, including the development of district work plans, identification of key implementing partners, implementation of strategies, and monitoring and reporting on quality improvement and social mobilisation.

Quality improvement strategies

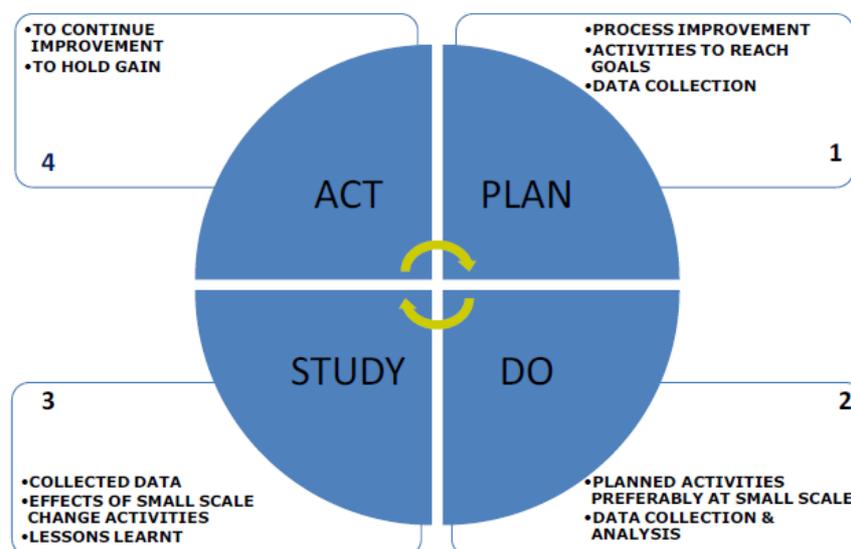
Quality improvement was driven by analysis of facility data. A '*Plan-Do-Study-Act*' (PDSA) cycle was used to improve the quality of care in each of the PMTCT clinical steps from the first antenatal visit through to post delivery.

Each district was appointed a dedicated '*Quality Mentor*' to work with health care workers, primary health care supervisors and district PMTCT coordinators on how to use quality improvement principles to work 'smarter' and improve access and health outcomes.

A mapping exercise in each district facility (based on routine data) determined which obstacles were preventing progress along each of the PMTCT clinical pathways. Interventions to overcome bottlenecks were then developed through a PDSA tool (fig. 1), again using facility-based data. Training was conducted at facility level and followed up with learning sessions to assess the outcomes of interventions implemented through the PDSA. Quality Mentors conducted monthly facility visits to review data, mentor and support improvement work.

Quality improvement interventions included strengthening district management of the PMTCT programme, improving care at facility level for HIV-infected pregnant women, and improving data collection. These interventions generated a new sense of energy and commitment at all levels, identified high-impact practices and built capacity for continuous quality improvement.

Figure 1. Quality improvement method implemented at facilities: the PDSA framework



Based on Deming's PDSA cycle (1951)

Social mobilisation strategies

Social mobilisation strategies aimed to promote the uptake of PMTCT services by addressing community and social barriers to PMTCT.

Mass media (comprising television, radio and print) reached large audiences quickly, increased awareness of PMTCT issues and created linkages to services.

Interpersonal communication (e.g. peer education, household visits, in-clinic facilitated discussions and community outreach activities such as open days) engaged individuals, their social networks and communities in dialogues and debates that explored their needs and how to make services more responsive. Capacity building and training in the use of communication tools and resources supported the roll-out of this approach.

Advocacy, particularly through *community dialogues*, engaged communities and leaders to find the most relevant strategies and solutions. Themes discussed included the marketing of available services, prevention of unwanted pregnancies (including teen pregnancy), and mobilising greater involvement by men in pregnancy and PMTCT. Among the barriers identified through community dialogues were:

- Lack of male participation in pregnancy and lack of knowledge of own HIV status due to fear to test.
- Role of the extended family giving consent to attend ANC and advice on feeding practices.
- Challenges to safe feeding practices including low levels of knowledge around exclusive breast- and infant formula feeding.

Other mobilisation strategies included training a cadre of community health care workers who provided in-clinic information and education sessions with individual follow up, and mobilising community-based media through a 13-part drama series and talk show on primary prevention and PMTCT.

4. What factors helped the success of the pilot phase?

The A-Plan was instrumental in improving PMTCT data, programme implementation and PMTCT outcomes in the six pilot districts. Key achievements and health gains are summarised in Box 2.

Box 2: The A-Plan's achievements in phase 1

- Development of a quality improvement model (focusing on 11 PMTCT indicators), 'how to' guiding tools/manuals, and PMTCT reporting templates.
- Deployment of dedicated sub-district Quality Mentors.
- Implementation in 161 facilities
- Training of 676 health care workers and managers in basic quality improvement tools and skills.
- Development of a replicable social mobilisation model to improve community awareness and involvement in PMTCT. This included training 171 community health workers, who supported over 2,700 pregnant women in six sub-districts; marketing of PMTCT and MCH services on local radio and newspapers and installing audio visual machines in 30 PHC facilities in six districts.

Improvements in health care and health outcomes in this phase included:

- Increase in the percentage of pregnant HIV positive women having a CD4 test from 88% to 98% across all facilities.
- Increase in HIV positive women with a CD4 count below 200 being referred for, and starting ART from 22% to 55%.
- Increase in the percentage of pregnant women presenting to antenatal clinics before 20 weeks gestation from 37% to 42%.
- A drop in the HIV positive rate at six weeks among babies exposed to HIV from 10% to 4%, meeting the National Strategic Plan target in those districts.
- HIV testing, infants receiving dual therapy, and counselling on infant feeding options reported at high levels throughout the study period (97%, 100%, and 100% respectively).

A number of factors help explain this success:

High profile leadership by the Minister of Health, the South African National AIDS Council and senior NDoH managers attracted the attention of development partners, civil society and local leaders in the selected districts. The A-Plan demonstrated that strong and visible leadership with a coherent plan plays a pivotal role in attracting development partner support, forging and maintaining novel partnerships between government and its stakeholders and achieving a common goal to improve health outcomes.

Strong coordination and management structures put in place by the NDoH (with financial support from DFID), with the establishment of a project management team with clear roles to lead on coordination, management, implementation, monitoring and reporting. Establishing effective coordination mechanisms was important at all levels of the A-Plan including at district and facility level for reviewing monthly data and quality improvements.

The National PMTCT plan and supporting documentation played an important role in facilitating development partner harmonisation and reducing duplication of effort, and helped ensure a more rational distribution and use of resources, and targeted technical support.

Early agreement on the A-Plan strategy with all PMTCT stakeholders helped ensure ownership and a clear understanding of objectives, deliverables and targets. Consensus on definitions, indicators and tools for monitoring and reporting also supported understanding of the Plan. At facility level, 11 indicators (derived from the national programme but closely aligned to the PMTCT cascade) proved to be more relevant to health workers, were easier to use and accelerated monthly and quarterly district reporting.

The development and agreement of a **practical, evidence-based quality improvement strategy accompanied by user-friendly tools** contributed to the results of Phase 1. Drivers of success included onsite training, technical support and mentorship, data improvement and the use of data by management.

Community-based social mobilisation strategies were based on analysis of bottlenecks at facility level and were therefore closely linked to clinical programmes and their outcomes. Using existing health system resources to overcome gaps or constraints in the PMTCT programme demonstrated the transferability of the A-Plan to other districts. For example, using existing community health workers to provide in-clinic support proved critical in linking clinical and community care and in supporting the continuum of care in PMTCT and MCH services.

5. What happened next?

From 2010, the A-Plan ceased to be a project with a dedicated budget, project plan and project management team. The remaining resources (a project manager, coordinator and administrator) were absorbed into the national PMTCT programme team. This is a model of partner collaboration with the NDoH, DFID, PEPFAR and UNICEF providing technical and financial support.

As the transition to phase 2 took place, the role of the A-Plan team also changed to that of provider of technical assistance in the 18 priority districts. By the end of 2010, 15 districts were implementing quality improvement and social mobilisation strategies based on the A-Plan. Among the achievements of phase 2 were:

- Integration of A-Plan objectives and activities into the national PMTCT Operational Plan for 2010/11.
- Integration of A-Plan resources and staff within the Maternal and Child Health Cluster to ensure alignment with NDoH changing priorities.
- Stronger partnership, financial support and alignment of efforts with and between development partners such as CDC, USAID and UNICEF at national and district level.
- Reprogramming of PEPFAR funded activities to align work plans with district health plans for PMTCT, MCH and HIV and AIDS management, care and support.

6. What lessons have been learned from implementing the A-Plan?

The A-Plan's experience offers lessons to other countries engaged in strengthening PMTCT services on a national scale.

- Improvements in PMTCT health outcomes can be achieved in a short space of time by committed partners and with strong management and coordination mechanisms.
- Early and intensive investment in advocacy to generate buy-in for the A-Plan helped with longer term integration and sustainability.
- The A-Plan had a positive effect on the morale of health care workers at facility level. Their confidence and enthusiasm for using and interrogating data was raised.
- The A-Plan strategies of improving the supply and demand of PMTCT services have potential applicability to other areas of health and can be adapted to improve the quality of programmes such as TB and MCH. Social mobilisation strategies linked to an analysis of local level programme barriers can lead to programme improvements (for example, early ANC attendance improved from 37% to 42%).
- Having dedicated and accountable Quality Mentors responsible for the implementation of the quality improvement tool and for reporting outcomes to stakeholders proved successful in improving PMTCT services at facility level.
- The A-Plan methodology acted as a catalyst to improving overall MCH services. Through A-Plan partners, integration models and tools were developed to guide the scale up of integrated services.
- Experience from Phase One suggests that integration of the A-Plan into the national programme requires leadership, careful planning, and commitment from the implementers to overcome perceived barriers to integration. Funding gaps between phases can also abruptly halt progress and the politics of a ministry of health can affect transition both between funding streams and implementation phases.
- Building the capacity and skills of existing resources early on improved the prospect of sustainability.

7. Conclusion

This case study demonstrates that high level political leadership and strong project management and coordination skills, combined with proven effective technical strategies can rapidly contribute to the improvement of health outcomes of priority programmes such as PMTCT, MCH and HIV.

The case study also illustrates that a phased approach to scaling up the coverage, quality and uptake of services on a national basis can be successful if pilot initiatives are designed to be integrated into national programmes from the outset. Investing in understanding the programme's objectives, building commitment and partnerships, and ensuring that initiatives are aligned with national programme objectives at all levels can facilitate the successful scale up of complex programmes.

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www.sarrahsouthafrica.org

The A-Plan

Successful implementation of the A-Plan was due to the commitment, strong partnerships and hard work of the following organisations: The National Department of Health, the provincial and district health management teams, and the health care workers; the South African National AIDS Council, UNAIDS, UNICEF, UNFPA, CDC, USAID, European Union, Institute for Healthcare Improvement, Reproductive Health Research Unit, Population Council, Broadreach, John's Hopkins Health and Education South Africa, Mindset, Community Health Media Trust, University of KwaZulu Natal 20,000 plus, URC, ICAP, EGPAF, Right to Care, Medical Research Council, ECHO, Centre for Rural Health, ARK, Foundation for Professional Development, Mothers2Mothers, the Eastern Cape Regional Training Centre, HISP, John Snow, and others.