

Getting pre-exposure prophylaxis (PrEP) to the people: opportunities, challenges and examples of successful health service models of PrEP implementation

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The world population has immensely suffered from the HIV/AIDS pandemic for nearly four decades. However, the advent of highly effective antiretrovirals could facilitate an end to the global epidemic. Effective HIV antiretroviral treatment has saved millions of lives of people with HIV since the mid-1990s and eliminates transmission risk from those who take it and have undetectable viral loads. Now, all evidence is in agreement that pre-exposure prophylaxis (PrEP) with antiretrovirals could prevent millions of infections as well.¹ Armed with evidence, the 2016 United Nations (UN) declaration² set the Sustainable Development Goal of ending AIDS as a public health threat by 2030.³ To achieve this goal, the Joint United Nations Programme on HIV/AIDS (UNAIDS) has put forward a new ‘Fast-Track’ approach to HIV prevention.⁴ It calls for a rapid scale-up of HIV prevention services and sets a target of three million people on PrEP by 2020.⁵

For those who work in HIV prevention, there is no doubt that antiretrovirals, both as treatment and PrEP, provide an opportunity to stop HIV transmission altogether. And yet, getting PrEP to the people is challenging – to date PrEP services have been established only in a few settings. This special issue of *Sexual Health* brings to light the opportunities and challenges for health service providers engaged in PrEP implementation. We discuss goal setting, policies, demand creation and what it takes to attract, serve and retain PrEP users. This is illustrated using experiences of PrEP implementation pioneers from around the world.

Coleman opens this special issue with the discussion of PrEP implementation targets.⁶ The ambitious global target was set up by UNAIDS to stimulate engagement with PrEP by national

HIV programs.⁵ Already 20 countries with the highest annual number of new HIV infections have revisited their prevention goals, or set the new ones, and developed detailed targets for PrEP rollout.⁷ There are, however, some challenges with national target setting: estimates of the size of key populations and data on PrEP demand are often not readily available. Coleman recommends that countries, where population size estimates are not available, can take a gradual approach to PrEP implementation; that is, start with small PrEP projects, set-up pragmatic targets for specific sites offering PrEP and make services as accessible as possible. Such approaches will inform the likely PrEP uptake patterns and future target calculations. Targets themselves will only be meaningful if they address the needs of the priority populations, stimulate PrEP demand and encourage the health-sector resource allocation and capacity building. PrEP targets should be a part of comprehensive prevention planning and require all stakeholders’ endorsement.⁸

Biomedical technologies have fundamentally changed the business of HIV prevention and shifted a major focus for prevention programs from community to healthcare settings, simply because PrEP requires a prescription. Clinical guidance on PrEP prescribing is essential for establishing a new standard-of-care service. Since September 2015, the World Health Organization (WHO) has recommended offering oral PrEP to every person at substantial HIV risk.⁹ Mameletzis *et al.* review and analyse national PrEP policies, both existent and in development.¹⁰ Although the number of policies is growing, actual access to PrEP services remains limited. In this context, alternative sources of PrEP drugs have flourished, most notably from online suppliers, with advocacy organisations stepping in to provide critical information about purchasing drugs

online. Mameletzis *et al.* argue that local policies and their translation into services are crucial for any meaningful PrEP implementation.

Some PrEP clinical guidance areas remain underdeveloped; for instance, the use of PrEP in pregnancy and postpartum. Despite the WHO's normative guidance, Kenya remains the only country with a generalised HIV epidemic that recommends PrEP for women during peri-conception. Women in high HIV prevalence settings face policy and health system barriers to PrEP access and are challenged by social, cultural and personal factors that frequently prevent them from accessing PrEP. Often, focus on testing, diagnosis and treatment of HIV overshadows the importance of a primary HIV prevention for women. Davies and Heffron not only examine the scarce policy guidance for PrEP use during peri-conception, pregnancy and postpartum periods, but also map the steps forward to optimise PrEP services for women.¹¹

Making PrEP easily accessible where people live requires that local medical providers are aware of and comfortable with prescribing PrEP. Indeed, most clinicians around the world are not prepared to deliver this service yet. Reyniers *et al.* discuss high acceptance of PrEP, but moderate willingness to prescribe it among Belgian clinicians.¹² HIV specialists remain better informed and equipped to provide PrEP. Interventions to improve general practitioners' knowledge, acceptance and ability to provide PrEP are vital to optimise PrEP rollout. Wood *et al.* describe the solution implemented and evaluated by Project ECHO (Extension for Community Healthcare Outcomes) in the US.¹³ ECHO was first developed to support hepatitis C virus treatment, but expanded to provide telementoring and support for community prescribers of PrEP. It helps healthcare practitioners to stay au fait with the current PrEP and HIV/sexually transmissible infection (STI) testing guidelines and grow confidence in serving PrEP to key populations.

The new PrEP service is likely to challenge the STI, HIV and sexual health service providers because of the influx of a large number of patients, which are expected to start PrEP and stay engaged with health services.⁹ Needleman *et al.* assessed PrEP services in the Melbourne Sexual Health Centre in Victoria – one of the largest sexual health clinics in Australia.¹⁴ There, an increase in the number of presentations followed the launch of PrEP, but this was not materially different from similar increases in previous years. There were no service delays as the Centre was large enough to absorb the demand. However, significant increases in PrEP demand may challenge other health services where capacity to accommodate new clients is already near saturation. Careful planning to reconfigure sexual health service delivery may be needed. For example, to accommodate the increasing number of PrEP users, non-traditional service models may be considered. New technologies and faster, cheaper, simpler and more user-friendly services can make it easier to bring PrEP to people. Several papers described below present fantastic examples of innovation.^{15–20}

Girometti *et al.* share their experience from the Dean Street Express (DSE) clinic, which has been at the forefront of PrEP rollout in London.¹⁵ DSE benefited from automating most steps in the patient pathway, which significantly reduced the test-to-

result notification and treatment time.¹ This is an excellent example of how the 3-monthly assessment of a large number of PrEP clients can be absorbed by computerising the processes of data collection, referrals and feedback of test results.

Schmidt *et al.* describe another way of adjusting workloads – a nurse-led model of PrEP services, which has been set-up in the state of New South Wales, Australia, to facilitate the rapid expansion of PrEP access.¹⁶ In this task-shifting model, nurses are fully in charge of all PrEP-related services. The model has been successfully implemented in public clinics, with widespread support from across the entire health sector.

In settings where traditional healthcare services are not available, creative alternative approaches can be considered; for example, PrEP provision by pharmacists, who are often the most accessible healthcare professionals in the community. Tung *et al.* describe a successful pharmacist-managed HIV PrEP clinic called One-Step-PrEP, which operates in a community pharmacy setting in Seattle, USA.¹⁷ Being appropriately trained and using PrEP prescribing guidance and clinic-based protocols, pharmacists perform certain functions that are beyond their typical scope of practice – initiate and manage PrEP, order and interpret laboratory tests and refer patients for specialist care when necessary.

Another approach to successful PrEP implementation can be to engage community workers in the provision of PrEP. Using the Princess PrEP program in Thailand as an example, Phanuphak *et al.* demonstrate that serving key populations (KP) with the help of KP representatives is feasible, fast and effective, particularly among men who have sex with men (MSM) and transgender individuals.¹⁸ Working at the forefront of HIV prevention, delivering PrEP to those most vulnerable and marginalised, KP community workers may be the missing link in streamlining PrEP provision; however, their role has not been fully recognised and endorsed by the current PrEP guidelines.

In most settings, demand for PrEP remains low. Schwartz *et al.* describe how strategic marketing and communication strategies of some big brands informed the Optimizing Prevention Technology Introduction on Schedule (OPTIONS) Consortium in creating the PrEP Communications Accelerator – a digital demand creation tool.¹⁹ This tool is locally adjustable to different target audiences and settings. It equips users in resource and time-constrained environments with a customised communications plan for PrEP demand creation and recommends the best media channels and communication tactics to drive local PrEP awareness and use.

PrEP use among all key population groups remains low; therefore, new approaches are critical to increase PrEP uptake and coverage. Mobile apps are one such approach with a promising potential. Sharpe and Kamara identified health service apps with features relevant to improving PrEP uptake and use.²⁰ These apps provide information and help with locating PrEP providers and can be further developed to assist with PrEP self-assessment and monitoring. They can assist health services in increasing the speed and quality of PrEP service provision.

Some countries have been in the forefront of PrEP implementation. Their case studies are included here to share the lessons learnt. Open access to PrEP outside clinical trials

was first available in the US. To date, even in the US, people at substantial risk for HIV still face significant barriers to PrEP use in most jurisdictions. Sullivan and Siegler discuss several key aspects that are crucial to optimise PrEP uptake by key populations,²¹ including: expansion of the number of PrEP delivery points closer to where people live; reduction of the cost of PrEP delivery; integration of PrEP programs with other services; development of interventions targeting PrEP adherence; and development of systems for PrEP monitoring.

Kenya participated in PrEP efficacy research²² and became the first African country to have a national public health PrEP program. Masyuko *et al.* describe the expedited integration of PrEP into the national package of HIV prevention interventions and Kenyan experiences of PrEP rollout,²³ including lessons learnt through the processes of setting up PrEP delivery, provider training, demand creation (with local brand name 'Jipende Ji PrEP' or 'love yourself, PrEP yourself') and service monitoring.

Some marginalised groups, such as transgender persons, have been much less involved in PrEP research, are not adequately covered in the clinical PrEP guidelines and are at risk of being left behind by PrEP implementation programs. Hood *et al.* write about experiences of a PrEP clinic in Detroit, USA, which serves a substantial number of transgender individuals.²⁴ In comparison to MSM, transgender persons experience additional barriers to accessing health services due to stigma and gender identity issues. An appropriate packaging of PrEP services for transgender individuals may attract and better serve some hard-to-reach users.

Tan *et al.* describe some other PrEP implementation challenges from the experience in Singapore,²⁵ where PrEP is available at unsubsidised prices. Tan *et al.* argue that even in high-income settings, national financing schemes will be important to ensure large-scale access to PrEP.

And finally, monitoring PrEP uptake and coverage may be challenging. Dunbar *et al.* describe the difficulty in estimating the numerator and denominator for PrEP uptake and coverage, particularly for adolescent girls and young women.²⁶ Using examples from the DREAMS initiative in sub-Saharan Africa (which is aimed to help girls develop into Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe women), as well as Kenyan and South African PrEP implementation programs, this paper demonstrates the different approaches to measuring the progress of PrEP programs and how this can bias interpretation. Dunbar *et al.* outline the steps in the oral PrEP cascade, and in doing so, helps to identify bottlenecks and opportunities for improvement.

Now that more countries are embarking on PrEP implementation, and PrEP service provision is growing, we hope that this special issue will encourage discussions of the opportunities and challenges faced by service providers, set the stage for know-how sharing and serve as a source of inspiration for service innovation. All pieces presented here intend to share with you some useful lessons of PrEP pioneers; but, more than that, they should serve as catalysts to accelerate PrEP expansion around the world. And if together we are successful, the global PrEP-coverage target may soon be within our reach.

Conflicts of interest

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