


Global evidence, impact and implementation of U=U

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While global efforts to control HIV continue, we have access to promising tools that can effectively end HIV transmission. Antiretroviral therapies (ART) are pivotal in both treatment and prevention. The Undetectable equals Untransmittable (U=U) movement, based on strong scientific evidence, asserts that people with HIV who have an undetectable viral load cannot sexually transmit the virus. Coined in 2016, U=U has mobilised communities and policymakers, emphasising the dual benefits of ART. It improves the physical well-being of individuals with HIV, reducing illness and death while alleviating the fear of transmission and promoting healthier relationships. This approach also has the potential to eradicate transmission and reduce societal stigma.

This Special Issue aims to enhance understanding and knowledge by highlighting the current evidence and identifying areas that need further research or attention. Our team of Guest Editors, including influential figures in the U=U movement, is honoured to curate a collection of manuscripts contributed by authors actively advancing the U=U movement.

The science and beginnings of U=U

The World Health Organization (WHO) is a trusted authority at the forefront of driving the global response to HIV. It has been crucial in improving early access to ART, particularly in resource-limited settings. Seale's review comprehensively chronicles significant milestones over 20 years, highlighting the evolving scientific advancements and WHO policies that have shaped the utilisation of ART for prevention.¹ These range from its initial focus on preventing mother-to-child transmission to the subsequent recommendation of ART for reducing HIV transmission to sexual partners, starting from 2012. There are ongoing on-the-ground efforts involving member states, especially those who may still question the scientific validity of U=U. Hui's review delves into the movement's origins, tracing its beginnings and shedding light on its development over time.² Additionally, it offers insights and suggestions on effectively incorporating the U=U message into existing policies and frameworks related to HIV/AIDS on a global scale.

Benefits of U=U

In their qualitative study, Wells *et al.* conducted interviews with people with HIV in Australia, highlighting the psychosocial advantages of achieving an undetectable viral load, which is a marker of good health and facilitates the resumption of sexual relationships.³ Conversely, participants expressed feelings of being 'dirty,' 'viral' and posing a risk to their sexual partners during periods when their viral load was detectable. The authors emphasise the importance of providing support and attention to individuals with HIV when their viral load becomes detectable.

Gray's study employs modelling using Australian data from 2009 to 2019 to showcase the economic advantages of initiating ART early among gay and bisexual men (GBM).⁴ The model estimated that implementing early ART prevented approximately 1624 new HIV diagnoses (95% percentile interval (PI): 1220–2099) and generated net cost savings of \$162 million AUD (95% PI: \$68–273 million AUD). These findings underscore the

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significant economic benefits associated with timely ART initiation and embracing the U=U principle among GBM in Australia.

U=U cascade

MacGibbon *et al.*'s national survey among GBM in Australia presents a U=U cascade, examining familiarity, perceived accuracy, and willingness to rely on U=U. Among the respondents ($n = 1280$), a significant proportion (79%) reported being familiar with U=U.⁵ Of those familiar, 67% perceived it as accurate, and 47% expressed willingness to rely on U=U as a prevention strategy. The findings highlight the 'know-do' gap and emphasise the importance of education and raising awareness about U=U among GBM. Further research is needed to understand the implications and bridge the gap between knowledge and action.

In a longitudinal qualitative analysis conducted by Grace *et al.*, the researchers examined the confidence levels of GBM who had experienced using pre-exposure prophylaxis in Canada regarding the U=U message.⁶ The study found that participants' confidence in U=U increased over time, leading them to feel comfortable engaging in sexual activities with partners who had undetectable viral loads. However, it is important to note that some participants still harboured reservations and did not fully trust U=U. These reservations were primarily rooted in concerns about their perceived understanding of scientific evidence supporting U=U or doubts about their partners' adherence to ART. The study suggests that further research is needed to explore sexual decision-making in various contexts and among different populations to understand better the factors influencing individuals' attitudes towards U=U and their sexual behaviour.

U=U in specific populations

The experience of women with HIV regarding the concept of U=U has received limited attention in the existing literature. However, Bhanji *et al.*'s qualitative study aims to address this gap by exploring the impact of a compelling film titled 'HIV made me fabulous'.⁷ The film utilises embodied storytelling techniques to convey its message. It effectively evokes emotional and, at times, physical responses that challenge both intra- and interpersonal HIV-related stigma. The study involved 16 women living with HIV and 12 women without HIV, providing insights into how the film influenced their perceptions and experiences related to HIV. The film and its approach offer a potential avenue for countering stigma and fostering a more positive narrative surrounding HIV among women.

Bernay *et al.*'s commentary emphasise the importance of initiating meaningful and developmentally appropriate

discussions about U=U with adolescents living with HIV rather than waiting until they reach young adulthood.⁸ The author argues that engaging in these conversations earlier can positively impact medication adherence and mental health outcomes by alleviating fears of transmitting the virus, reducing self-stigma, and enhancing overall well-being. The commentary draws upon a global consultation conducted by WHO involving 388 adolescents, which revealed a significant lack of knowledge and awareness regarding viral load suppression and U=U. These findings underscore the urgent need to prioritise education and awareness efforts surrounding U=U among adolescents living with HIV.

Advocacy for U=U

Despite the well-established scientific evidence supporting U=U and its potential to alleviate HIV-related stigma, people with HIV still face stigma and experience sexual rejection. In a thought-provoking letter to the editor, Wells urges those who do not have HIV to take responsibility for actively reducing HIV-related stigma.⁹ The primary care sector plays a crucial role in spreading the message of U=U, but there is a dearth of studies examining this aspect. Wu *et al.* conducted a nationwide survey among general practitioners in Australia, revealing that 74% of participants agreed with U=U.¹⁰ However, only 34% had discussed U=U with their patients. The study identified key barriers to discussing U=U, including a perceived lack of patients who would benefit from the information and a lack of understanding regarding the concept of U=U.

Country case studies

Phanuphak *et al.*'s paper from Thailand showcases the successful implementation of U=U, from its controversial beginnings to its endorsement as a crucial strategy for ending the AIDS epidemic.¹¹ The study involved interviews with 43 individuals living with HIV and their partners and discussions with healthcare providers and peers. The findings demonstrate the empowering effect of U=U at the individual and relationship level, reducing fear and empowering informed decision-making. At the community level, U=U helped reduce stigma and discrimination by promoting accurate information and dispelling misconceptions. The study also highlights how U=U has been integrated into national policy guidelines, ensuring widespread dissemination and improved management of HIV.

Tamati's commentary proposes a framework to make the U=U message meaningful for Indigenous Peoples in New Zealand.¹² The framework emphasises an interdependent balance of four pillars: physical, spiritual, family, and mental health. By incorporating these pillars, the U=U message can

be effectively communicated and integrated within the cultural context and values of Indigenous Peoples. This comprehensive approach recognises the interconnectedness of health and well-being in Indigenous communities beyond just the medical aspect of U=U. Tamati's commentary promotes a holistic and culturally sensitive approach to implementing the U=U message among Indigenous Peoples, aligning with their values, beliefs, and unique health needs.

Magbadelo's short report focuses on the early stages of the U=U campaign in Nigeria, starting in 2019.¹³ The report highlights progress in spreading the U=U message while stressing the need for additional resources for widespread implementation. It emphasises integrating U=U into patient interactions, with healthcare providers discussing it, addressing concerns, and highlighting its potential for better health. Leveraging social and formal media channels is also emphasised to reach a broader audience and share accurate U=U information. However, adequate resources, including funding and support, are crucial for effectively utilising these platforms and sustaining campaigns.

ART is a valuable asset in the battle against HIV/AIDS, supported by robust scientific evidence and tangible benefits. However, more work remains. Advocacy for U=U should involve multiple stakeholders, including healthcare professionals, policymakers, and the wider community. Specific populations such as women, adolescents, and Indigenous people should not be overlooked in delivering the U=U message due to their unique challenges. Expanding awareness, integrating U=U into guidelines, and advocating for widespread adoption can lead to significant progress in controlling the HIV pandemic. These efforts can improve lives, reduce transmission rates, and ultimately end the HIV pandemic.

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