

## Access to health care is critical for the control of Sexually Transmitted Infections (STIs)

By Dr Christopher K Fairley

I remember the moment as if it were only yesterday. I was sitting at the back of a lecture theatre at the Alfred Hospital in 1998 listening to Dr Jackie Mein present research data from a study we had undertaken in the Northern Territory.<sup>(1)</sup> The data showed that 27 per cent of Aboriginal and Torres Strait Islander women had trichomonas but only one per cent of non-Indigenous women had it. But significantly fewer Indigenous women (42 per cent) had human papillomavirus infection (HPV) than non-Indigenous women (55 per cent). Suddenly, the reason for the enormously high rate of treatable sexually transmitted infections (STIs) in Indigenous communities became clear.

It wasn't their behaviour that was responsible. In fact, it had nothing to do with their behaviour. They had *not* had *too many* partners. Indeed, they had had fewer partners than the non-Indigenous women and that was exactly why they had less human papillomavirus infection (HPV) than non-Indigenous women! Because HPV can't be treated, infection is directly related to their number of sexual partners.

But despite fewer partners, Aboriginal and Torres Strait Islander people had many more treatable STIs because they had limited access to health care which meant that symptomatic infections (e.g. gonorrhoea) were passed on, again and again; and not treated.<sup>(2)</sup> These

infections would have been treated in any Australian capital city within days either by general practitioners or the network of sexual health services.

A similar logic explains why gay and other men who have sex with men (MSM) have such high rates of gonorrhoea.<sup>(3)</sup> When heterosexual couples acquire gonorrhoea, virtually all men and most women develop symptoms in days and seek health care. If only one of them seeks health care, the other will notify their partners who will also seek treatment. But the duration of untreated gonorrhoea is much longer and hence opportunity to pass it on is much greater in MSM. This is because unlike heterosexual men where the penis is the only site of infection, in MSM, throat and anal infections are common and virtually never have symptoms. And to further complicate things, the stigma associated with same sex relationships means there are more anonymous sexual partners and therefore necessarily fewer partner notifications. So, the reason that gonorrhoea rates are much higher in MSM than heterosexuals is related to factors other than the higher numbers of partners. It is the much longer duration infections in MSM that is responsible and the solution to this is frequent testing, so these asymptomatic infections can be diagnosed and treated early.

These two points are critically important for governments to understand; *accessible healthcare* is what controls STIs and now in 2018 it is also what primarily controls HIV. And accessible healthcare is *not* a personal choice. It is a *decision made by governments* when designing and funding our health services. Therefore, much of the responsibility for a high prevalence of STIs or for future HIV transmission rests with governments and not with individuals.

There are only three things that determine how common STIs or HIV will be in a population. These are; (1) the probability of transmission per sexual partnership, (2) the rate at which people change their sexual partners and (3) how long it takes to get infections treated (or to become no longer transmissible in the case of HIV). Variations on each of these also play a role but are beyond the scope of this paper.

The effect of these three things is illustrated very clearly in the rates of syphilis in the UK over the last 80 years. Rates of syphilis rose markedly in World War 1. Rates then fell precipitously with the discovery of penicillin, rose again with the sexual revolution, fell with the appearance of HIV and then rose again with the successful treatment of HIV. But looking carefully at the figure you'll see that the discovery of penicillin had

the most profound effect because suddenly syphilis was infectious for only days and not years. It is important to note that among heterosexuals (inferred by rates in women), cases have not risen significantly since penicillin was introduced nearly 70 years ago, demonstrating the immense power that accessible healthcare has for controlling some STIs. Condoms are commonly cited as the key public health measure to control STIs, but while effective, they are much *less effective than accessible healthcare*. Moreover, public health campaigns to increase condom use result in relatively small rises in condom use and consequently small effects of STIs in the community.(4) In one of the largest studies of this issue involving 5,833 individuals, intensive counselling sessions were compared to five-minute didactic information sessions. Twelve months later condom use was somewhat higher (44 per cent vs 38 per cent) and STI rates somewhat lower (twelve per cent vs. 14.6 per cent). Compare this modest effect to the effect of restricting access to health care where 27 per cent of Indigenous women had trichomonas compared to one per cent of non - Indigenous women.(5) Some cite the rise in condom use from virtually zero in MSM before the HIV epidemic to nearly 100 per cent in the epidemics darkest hours as evidence that promotion works. The dramatic increase in condom use associated with the appearance of HIV was not a 'public health intervention'; it was a tragedy of unparalleled proportions that hopefully will never be repeated.

There is ample evidence around the world to support access to healthcare having a powerful effect on STI prevalence.(2, 6) It is important to appreciate that providing accessible healthcare does not necessarily mean that the healthcare will be '*accessed*'. Remote Indigenous communities provide a case in point. They are often staffed by members of the community that significantly limit the perceived confidentiality. Contrast this with capital cities where it is relatively easy to obtain anonymous health care from networks of sexual health services. It is important to note however that even in capital cities now, STI services are struggling under the large increases in STIs and in

some cases are now becoming difficult to access.

HIV similarly has the potential to be well controlled in populations with good access to healthcare and biomedical prevention strategies, but poorly controlled in those without.(7) The lifetime risk of acquiring HIV in the United States is 50 per cent for an African American man who has sex with men (MSM) but only 9 per cent for a white MSM.(8) Differences in partner numbers or condom use don't explain this; it is about access to HIV biomedical preventions in these men and their sexual partners. It is lower in white MSM because; (1) better access to HIV testing lowers the number of partners with undiagnosed HIV; (2) better access to pre-exposure prophylaxis can lower the chance of acquiring HIV by 99 per cent; and (3) better access to HIV treatments suppresses the HIV viral load in sexual partners becoming rapidly undetectable and therefore not transmissible. Condoms provide some protection against HIV but are nowhere near as powerful as biomedical preventions. Rapidly falling rates of HIV in San Francisco where PrEP was adopted early provide our earliest evidence of the power of biomedical interventions at a population level.(9)

The consequences of getting STI control policies wrong are substantial. If syphilis continues to spread at its current rate many babies will be born with congenital syphilis. Victoria saw its first cases for 13 years, last year. If gonorrhoea rates continue the probability of a multi-resistant organism will rise and inevitably occur. Gonorrhoea rates will then rise very dramatically as treatment becomes much more difficult. HIV rises may follow. All these scenarios are preventable, but only with good public health policy.

So, what should we say to our local members of parliament so they can provide us with a community that has a low prevalence of sexually transmitted infections?

We should ask for a network of accessible health care centres for STI and HIV care where one can obtain free, non-discriminatory health care services

that are accessible. And we should explain to our politicians that providing accessible health care services that result in a lower prevalence of STIs is cheaper than providing health services to treat infections if the prevalence is allowed to rise.(10) Our current STI services are inadequate. The UK and USA are shutting down their clinics and it should come as no surprise that rates of STIs are rapidly rising in response. Three to four hour waits for such services essentially means delayed and avoided treatment and further unnecessary transmissions.

These services should exist in a community with high levels of self-efficacy and knowledge about STI symptoms and screening recommendations. This will ensure individuals attend services for treatment early and are tested with sufficient frequency to maintain low rates of STIs.

And finally, they should continue to fund research and innovation in this area whether it be the use of point of care tests or improving the quality of STI health care in remote Aboriginal and Torres Strait Islander communities, the development of non-condom STI prevention such as antibacterial mouthwash, web sites for partner notification or computer algorithms that automatically diagnose STIs in the home. But all of this must be done in the context of a network of high quality and accessible STI health services.

We should remind our politicians we can be the best in the world at this. We have excelled in some areas of STI prevention. Australia arguably now has the lowest prevalence of HPV infection of any country in the world, courtesy of the exceptional HPV vaccination program for girls and boys. Let's also have the lowest prevalence of STIs in the world.

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