



The challenges and opportunities of new technologies: examples from HIV social and behavioural research

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Never Stand Still

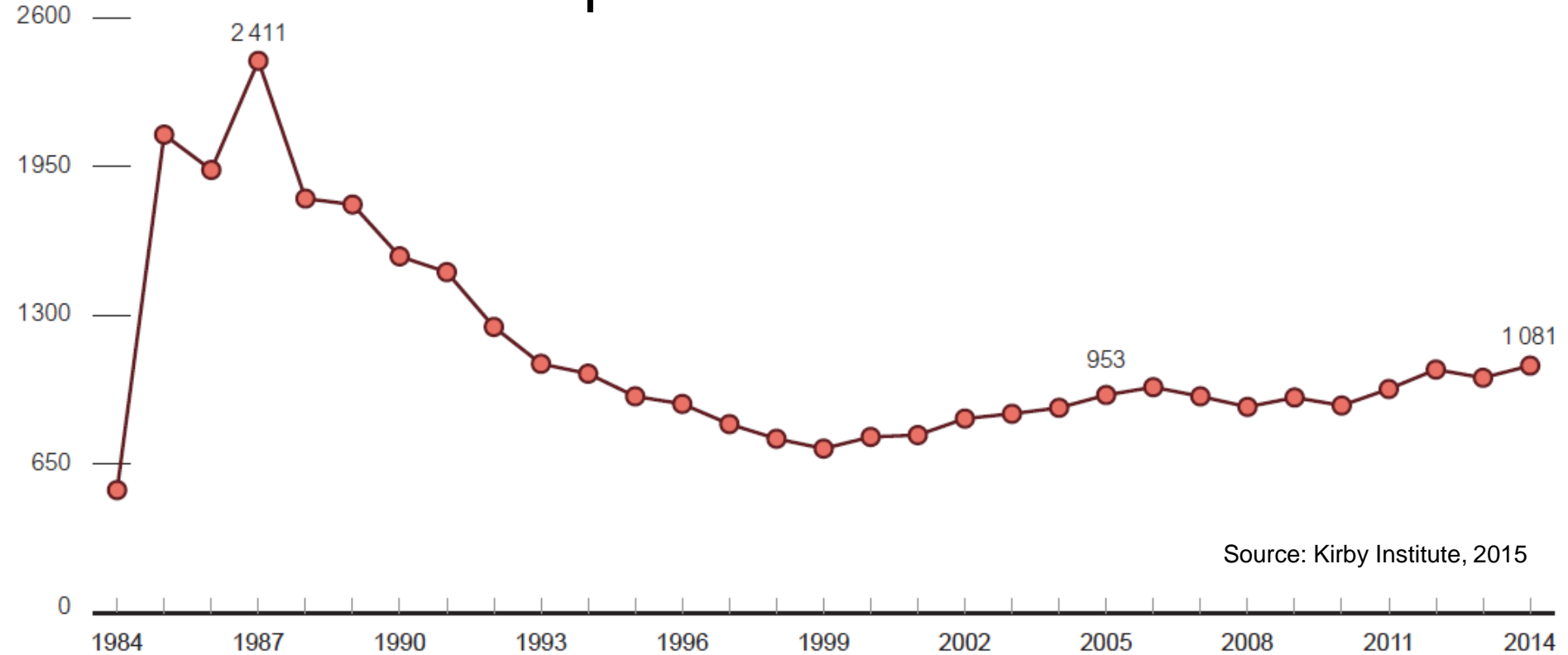
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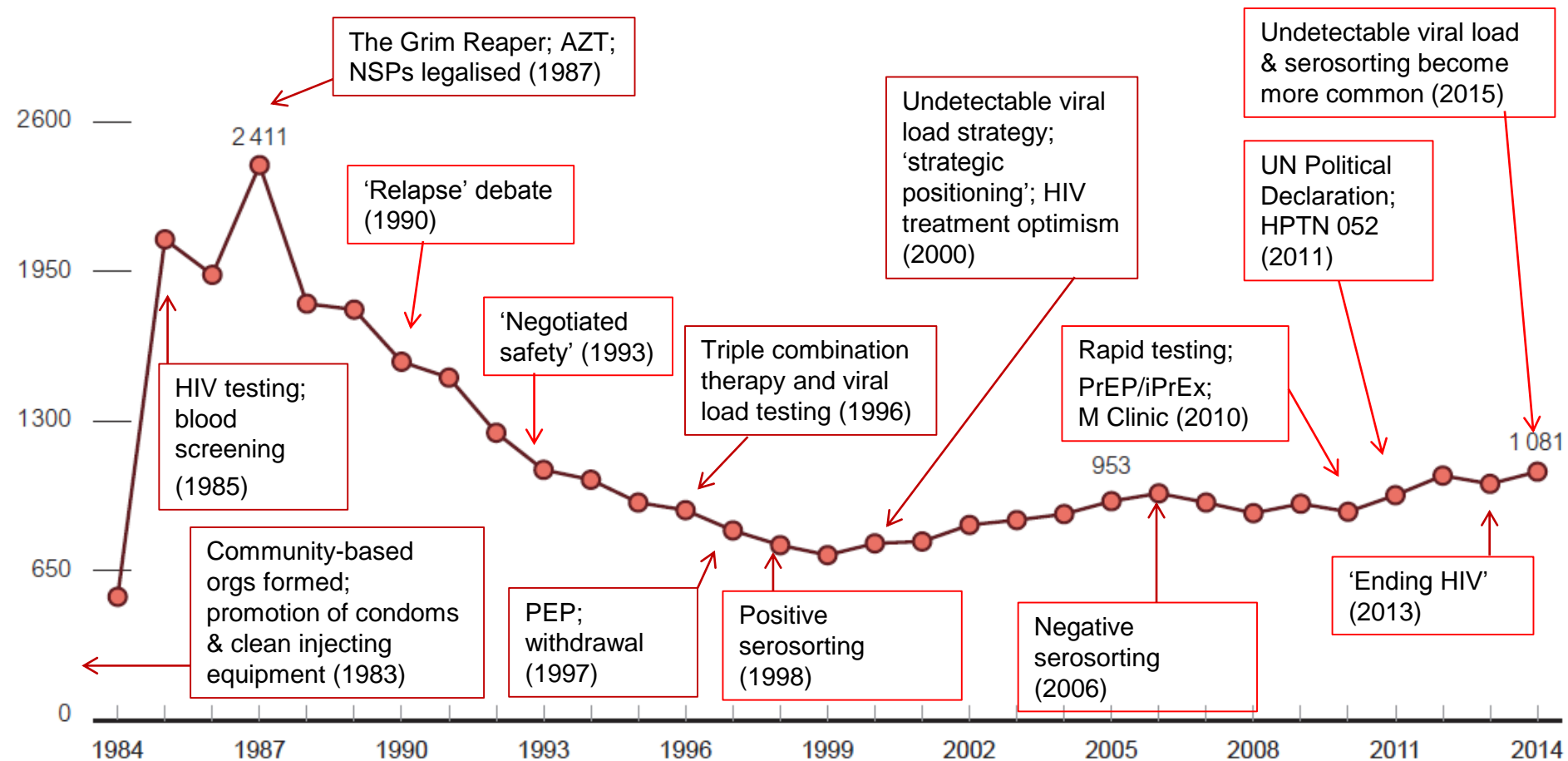
Overview

- Major developments in communication, testing and prevention technologies over last 15 years
- How do we conceptualise technological change?
- Can we improve our responses to new technology, and therefore improve their beneficial impact?
- Examples of:
 - Mobile apps
 - Rapid testing and HIV self-testing
 - HIV pre-exposure prophylaxis (PrEP) and treatment as prevention (TasP)
- Focus on gay and bisexual men and HIV

Australia's HIV epidemic



Source: Kirby Institute, 2015



Conceptualising technological change

- Technological determinism
 - Technology is a primary force shaping society and people e.g. ‘the media/internet/apps/drugs made me do it’
 - Medical technology as social control (reliance on clinical care/drugs/ intervention medicalises, surveils and constrains people)
- Social essentialism
 - Technology are neutral tools/blank slates, rendered meaningful by people
 - People have agency, technology does little to affect their actions
- Technology-in-practice
 - Technology, people and culture change as they act together e.g. HIV testing

Timmermans, S., & Berg, M. (2003). [The practice of medical technology](#). *Sociology of Health & Illness*, 25, 97-114.

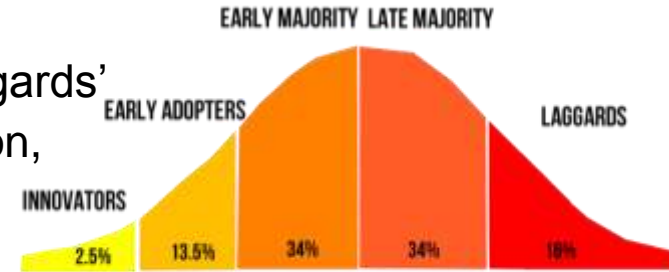
Conceptualising technological change

- Diffusion of Innovation

- Stages of adoption, from ‘early adopters’ to ‘laggards’
- Influences on use e.g. availability, communication, attributes of the technology, opinion leaders

- Disruptive Innovation

- Introduce simpler/more effective/cheaper/more attractive/accessible alternatives with a view to improving prevention, testing or care
- New technology disrupts, displaces existing practices



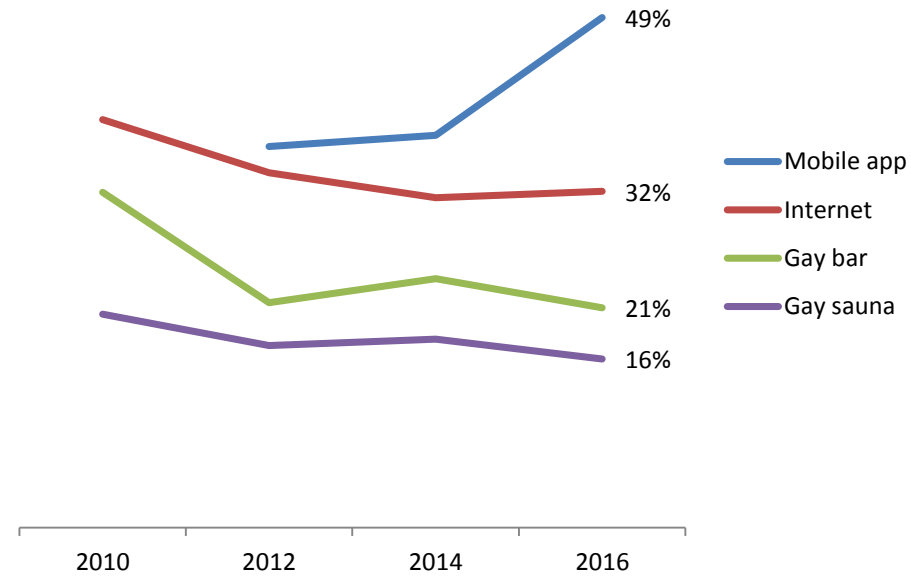
Bertrand, J. T. (2004). [Diffusion of innovations and HIV/AIDS](#). *Journal of Health Communication*, 9(sup 1), 113-121.

Rotheram-Borus, M. J., et al. (2009). [The past, present, and future of HIV prevention](#). *Annual Review of Clinical Psychology*, 5, 143-167.

Mobile apps

- Rapid uptake of mobile apps to meet sex partners by gay/bi men
- Displaced/disrupted existing practices
- Detaches sex-seeking/socialising from fixed locations (home & venues)
- New, abbreviated communication between users, practices of sorting/filtering/profiling (Race, 2015)
- Do apps modify behaviour/increase risk?
- Can we engage men through apps?

Where gay men meet male sex partners (Perth GCPS)



Race, K. (2015). [Speculative pragmatism and intimate arrangements: online hook-up devices in gay life](#). *Culture, Health and Sexuality*, 17(4), 496-511.

Do mobile apps increase HIV/STI risk?

Downloaded from <http://sti.bmj.com/> on June 7, 2016 - Published by group.bmj.com

STI Online First, published on April 19, 2016 as 10.1136/sextrans-2015-052325

Behaviour

ORIGINAL ARTICLE

The use of mobile phone apps by Australian gay and bisexual men to meet sex partners: an analysis of sex-seeking repertoires and risks for HIV and STIs using behavioural surveillance data

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ABSTRACT

Background Mobile phone apps are now the most popular method that Australian gay men use to find sex partners. Partner-seeking mobile phone apps use location functions to identify like-minded men and display their proximity. This study examines whether meeting partners via mobile apps is associated with a

partners nearby by using GPS functions. Many competitor applications have since been launched. The recent uptake in use of mobile phone apps appears to have resulted in a decline in the use of the internet and other methods (like going to venues) to meet partners in Australia.^{5 9 10} Mobile phone apps have become the most common way

Rapid testing and HIV self-testing

- Barriers to HIV testing, such as fear of a positive result, lack of perceived risk and inconvenience have long been recognised (De Wit & Adam, 2008; Conway et al, 2015)
- However, until recently models of HIV testing in Australia have remained unchanged for decades
- Rapid HIV testing has been partially introduced
- HIV self-testing is being trialled and debated, but regulatory hurdles remain
- These technologies raise issues about *control* over medical technology and results, acceptable levels of *accuracy* and *cost*, and the ‘proper’ uses of testing
- Arguably, disruptive innovation is being resisted in some quarters

Conway, D. P., et al. (2015). [Barriers to HIV testing and characteristics associated with never testing among gay and bisexual men attending sexual health clinics in Sydney](#). *Journal of the International AIDS Society*, 18(1), 20221.

De Wit, J. B. F., & Adam, P. C. G. (2008). [To test or not to test: psychosocial barriers to HIV testing in high-income countries](#). *HIV Medicine*, 9(S2), 20-22.

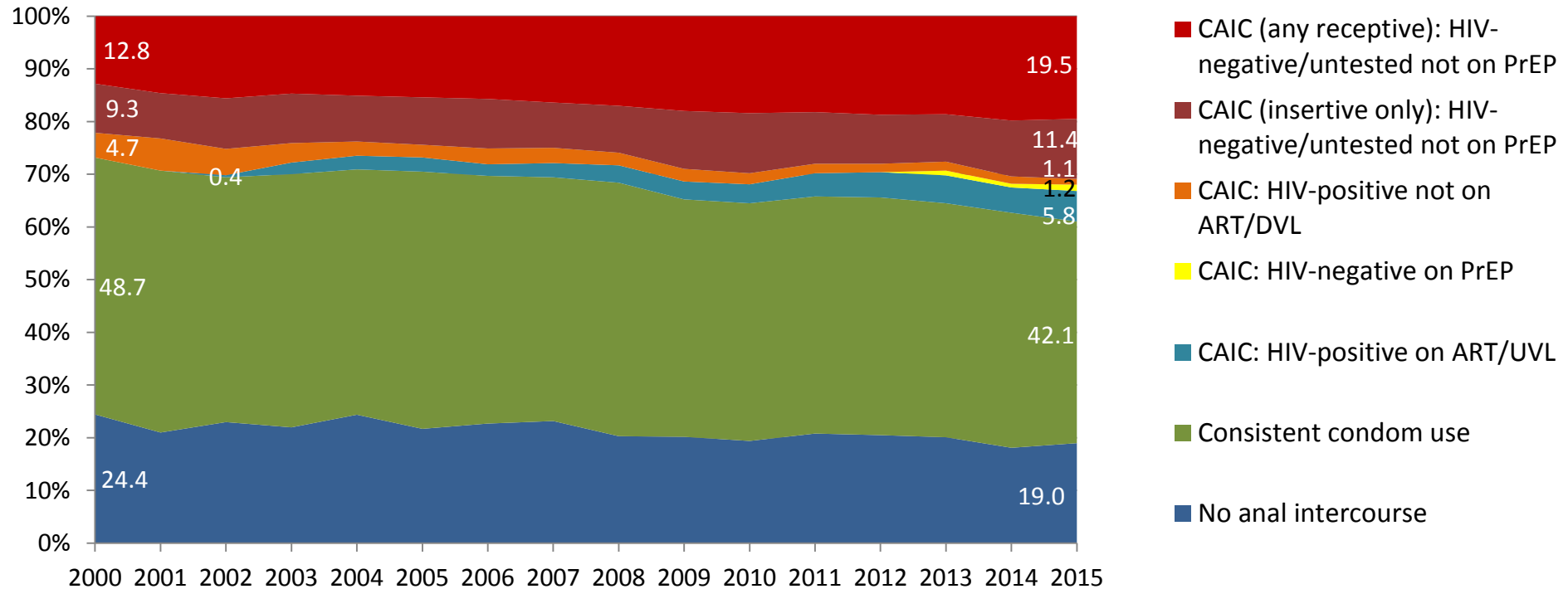
Research on HIV testing

- Patient experience of testing at clinics can be challenging, despite supportive models of care (Holt et al, 2010)
- Community-based testing (e.g. M Clinic) is highly acceptable and cost effective (Conway et al, 2013)
- Rapid HIV testing is preferred over conventional testing by gay/bi men (Conway et al, 2015)
- Parallel conventional serology is, however, warranted for recent risks (Conway et al, 2014)
- HIV self-testing is feasible and highly acceptable to gay/bi men (Jamil et al, 2015; Prestage et al, 2016)
- HIV self-testing could significantly increase testing frequency among high risk men and infrequent testers (Guy et al, 2015; Prestage et al, 2016)
- But...
 - Who pays?
 - Do we support home use?
 - How do we monitor use?
 - Do we embrace non-traditional uses?
 - Can we encourage disruption?

PrEP and TasP

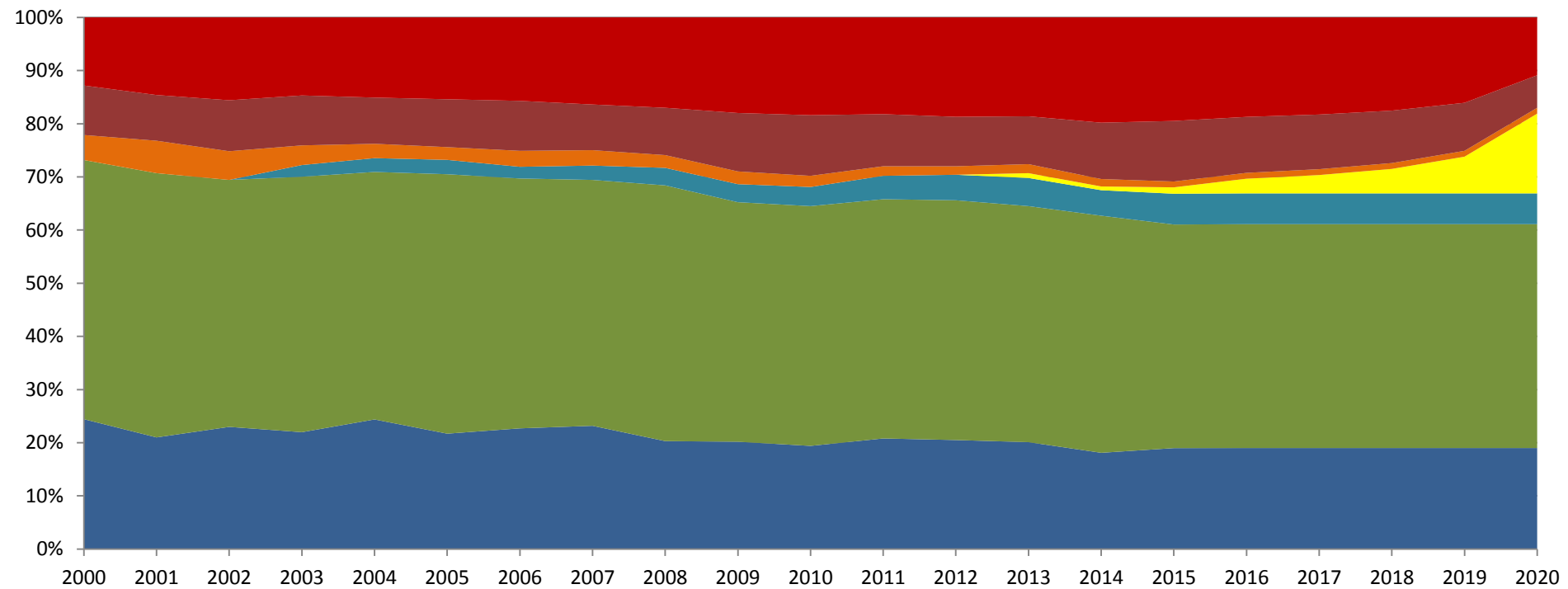
- Since 2010, growing focus on biomedical HIV prevention
- Preventative effects of HIV treatment increasingly promoted; and gay and bisexual men increasingly aware of them (Lea et al, 2015)
- Undetectable viral load now the dominant, non-condom-based risk reduction strategy used by HIV-positive men (Holt et al, 2015)
- PrEP roll-out rapidly expanding in eastern states; men at high risk particularly interested in using PrEP (Lea et al, 2015)
- Some questions:
 - What will PrEP and TasP roll-out do to existing prevention practices?
 - Can we monitor impact?
 - How will gay and bisexual men's norms evolve as these technologies are embraced and used? e.g. disclosure, negotiation, what counts as 'safe sex'?

Casual male partners & ARV protection in CAIC

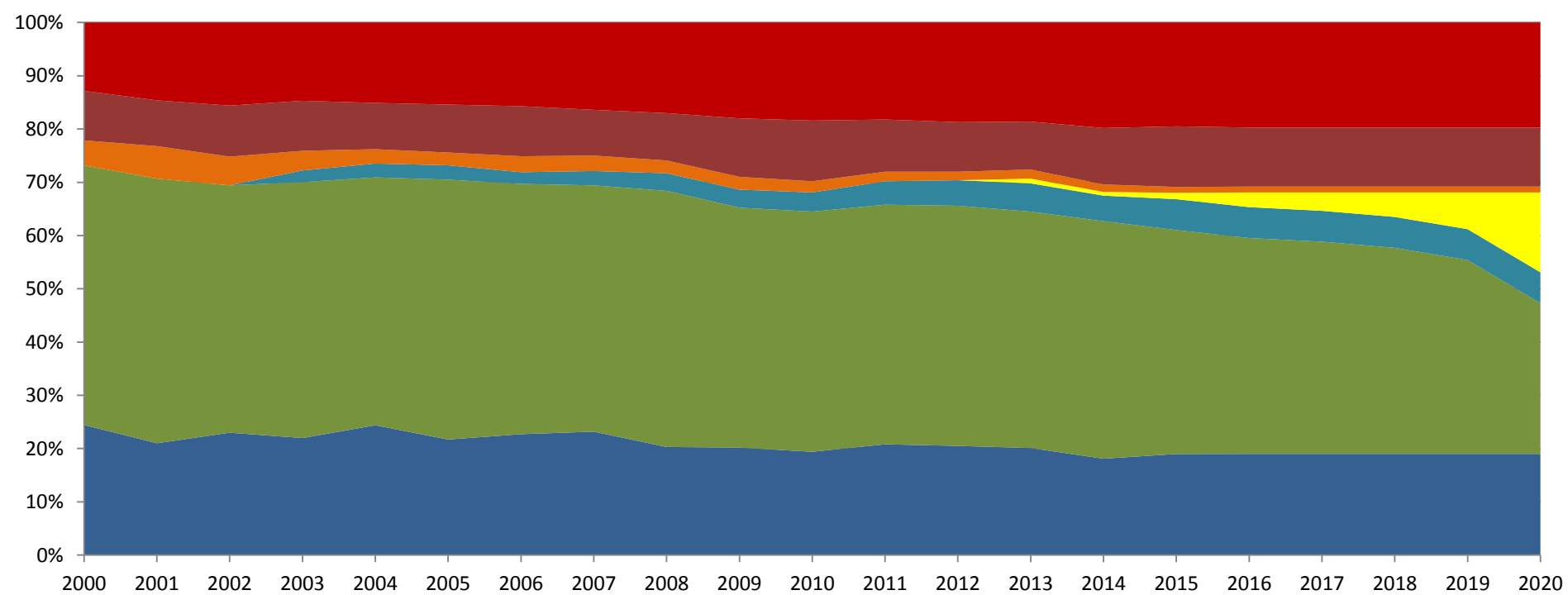


Source: Gay Community Periodic Surveys, 7 states/territories

Scenario 1 – reduced risk



Scenario 2 – community risk compensation



Summary

- History of the HIV epidemic underlines that technological change and creative/unexpected responses to it are inevitable
- Assumptions about the relationships between technology and users often guide our responses to new technology
- HIV prevention, testing and care appear to require innovation, because of barriers to access, poor uptake or lack of effectiveness
- However, when disruptive innovations are introduced, the technology, users and providers are all likely to change ‘in practice’, requiring subtlety in research and evaluation.

Additional references

- Conway D. P., et al. (2013). [A review of sexual health services for gay, bisexual and other men who have sex with men in Western Australia](#). Sydney: The Kirby Institute, UNSW.
- Conway, D. P., et al. (2014). [Multi-centre evaluation of the Determine HIV Combo assay when used for point of care testing in a high risk clinic-based population](#). *PLoS ONE*, 9(4), e94062.
- Conway, D. P., et al. (2015). [Rapid HIV testing is highly acceptable and preferred among high-risk gay and bisexual men after implementation in Sydney sexual health clinics](#). *PLoS ONE*, 10(4), e0123814.
- Guy, R., et al. (2015). [Potential public health benefits of HIV testing occurring at home in Australia](#). *Medical Journal of Australia*, 202(10), 529-531.
- Holt, M., et al. (2010). [Gay men's perceptions of sexually transmissible infections and their experiences of diagnosis](#). *Sexual Health*, 7(4), 411-416.
- Holt, M. et al. (2015). [HIV prevention by Australian gay and bisexual men with casual partners: the emergence of undetectable viral load as one of a range of risk reduction strategies](#). *JAIDS*. Advance online publication.
- Jamil, M. S., et al. (2015). [Rationale and design of FORTH: a randomised controlled trial assessing the effectiveness of HIV self-testing in increasing HIV testing frequency among gay and bisexual men](#). *BMC Infectious Diseases*, 15(1), 1-10.
- Lea, T., et al. (2015). [Gay men's attitudes to biomedical HIV prevention: Key findings from the PrEPARE Project 2015](#). Sydney: CSRH, UNSW.
- Prestage, G., et al. (2016). [Previous and future use of HIV self-testing: a survey of Australian gay and bisexual men](#). *Sexual Health*, 13(1), 55-62.