

that potential sex partners would avoid them (mean 2.03; SD 1.01)

**Conclusion** These findings are notable because they support the results of recent qualitative research on the role of PrEP in decreasing anxiety around HIV. Caution around disclosure (including to sexual partners) suggests concern about negative reactions (despite few actual occurrences) and underscores the current novelty of PrEP as a prevention strategy.

**Disclosure of interest statement** The VicPrEP study was funded by the Victorian Department of Health and study drug was supplied by Gilead. Dean Murphy receives funding from the Australian Government Department of Health and a research grant from the Victorian Department of Health.

#### 019.4 AWARENESS AND INTERPRETATION OF THE *ENDING HIV* CAMPAIGN AND CHANGING ATTITUDES ABOUT TREATMENT AS PREVENTION IN AN ONLINE COHORT OF MSM

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**Introduction** Treatment as prevention (TAP) has become a key part of HIV control strategies in Australia. *Ending HIV* was launched in September 2013 as a combination prevention campaign with three messages: HIV testing, HIV treatment, and condom-reinforcement. The Burnet Institute has maintained a HIV prevention evaluation online cohort of men who have sex with men. We compare pre- and post-campaign evaluation surveys to assess *Ending HIV* campaign awareness and changes in campaign-related attitudes and beliefs.

**Methods** Participants were surveyed in August 2013 (S1, pre-*Ending HIV* implementation) and July 2014 (S2, post-*Ending HIV* implementation). Campaign recall and message recognition were assessed at S2, alongside S1 to S2 changes in attitudes and beliefs regarding a range of prevention topics, including TaP.

**Results** There were 353 respondents at S1 and 328 at S2; 193 completed both surveys. 158 respondents (48%) were aware of *Ending HIV* at S2, of who 87 (55%) correctly recalled at least one campaign message. Most commonly recalled messages referenced HIV testing (58%), followed by HIV treatment (37%) and condom-reinforcement (29%). Significant increases were seen in the proportion of HIV-negative men reporting positive changes in attitudes/beliefs in 7 out of 9 statements about TaP ( $p < 0.05$ ). Proportional increases ranged from 5.0–17.0%, and highest for agreeing that PrEP is effective for HIV prevention (17%) and disagreeing that people should delay treatment until absolutely necessary (12%). Changes in attitudes and beliefs did not differ significantly by campaign awareness at S2.

**Conclusion** While awareness of *Ending HIV* is encouraging, comprehension of different combination prevention messages was inconsistent and modest for some messages. Predominant shifts in beliefs about TAP are likely to be driven by influences beyond campaign exposure. Future implementation of *Ending HIV* and associated prevention campaigns should ensure sufficient

emphasis on primary prevention and early treatment messages as a part of combination prevention.

**Disclosure of interest statement** All authors have no conflicts to declare. The Victorian Department of Health funds the implementation of the *Ending HIV* campaign by the Victorian AIDS Council, and the evaluation of HIV prevention campaigns by the Burnet Institute. The authors would like to acknowledge the NHMRC who provide funding to Margaret Hellard as a Senior Research Fellow, Anna Wilkinson as a public health scholarship recipient, Alisa Pedrana through the Sidney Sax Post-Doctoral Fellowship and Mark Stoové through a Career Development Fellowship. The authors gratefully acknowledge the contribution to this work of Victorian Operational Infrastructure Support Program received by the Burnet Institute.

#### 019.5 DOES TREATMENT AS PREVENTION JEOPARDISE CONDOM USE AMONGST GAY MEN? AN ANALYSIS OF GAY MEN'S ATTITUDES IN NSW OVER TWO YEARS

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**Introduction** *Ending HIV* (EH) is the first large scale campaign to embody the NSW HIV Strategy, leveraging the treatment as prevention approach (TasP) in order to mobilise gay men to end HIV transmission by 2020.

Since the inception of the campaign, ACON has been monitoring gay men's knowledge and attitudes on HIV prevention in the context of TasP. One of the objectives was to assess whether condom use could be affected by an increased awareness about TasP.

**Methods** Across five online evaluation surveys run by an independent consultant after each phase of the EH campaign, responses of gay men to seven statements have been tracked over two years. These statements covered testing and treatment and one was specific about the importance of condoms: 'Condoms continue to be the most effective way of preventing HIV transmission.'

Each online evaluation recruited more than 500 gay men living in NSW. All samples were consistent across the four surveys in terms of age groups, HIV status and locations.

**Results** While all respondents demonstrate significant positive shifts in knowledge, intent and attitudes towards testing and treatment, an overwhelmingly majority of survey respondents (across all ages, HIV statuses and locations) continue to strongly agree or agree that condoms remain the most effective way of preventing HIV transmission.

This is confirmed by the 2014 Sydney Gay Community Periodic Survey, which shows that the rate of unprotected anal intercourse has been relatively stable between 2010 and 2014.

**Conclusion** TasP has been widely discussed among HIV scientists, clinicians and the community sectors for several years. Many have expressed their concern that promoting TasP could jeopardise condom use. The EH campaign evaluation over two years demonstrates that TasP and condom reinforcement can go together, even if gay men now understand the preventative benefits of treatment.

## O.20 - HIV transmission in MSM

## O20.1 THE CHALLENGES OF DIVERSITY: HIV-1 SUBTYPE DISTRIBUTION AND TRANSMISSION NETWORKS WITHIN THE AUSTRALIAN MOLECULAR EPIDEMIOLOGY NETWORK-HIV 2005–2012

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**Introduction** Rates of new HIV diagnoses are increasing in Australia, with evidence of an increasing proportion of non-B subtypes reflecting a growing impact of sexual networks, migration and travel. This present study aims to further define HIV-1 subtype diversity and investigate HIV-1 transmission networks within Australia.

**Methods** The Australian Molecular Epidemiology Network (AMEN) HIV collaborating sites in Western Australia, South Australia, Victoria, Queensland and Western Sydney, provided baseline HIV-1 partial *pol* sequence, age and gender information for a total of 4929 patients during 2005–2012. HIV-1 phylogenetic analyses utilised MEGA V6, with a stringent classification of transmission clusters (bootstrap  $\geq 98\%$ , genetic distance  $\leq 1.5\%$ ).

**Results** HIV-1 B subtype represented 74.9% of 4929 sequences (WA 59.3%, SA 68.6%, W Syd 75.2%, Vic 75.7%, Qld 82.3%), with a greater proportion of clusters compared to non-B subtypes (27.6% vs 22.4% of sequences,  $p = 0.003$ ), larger cluster size (36.0% with  $> 2$  sequences vs 24.8% of non-B clusters,  $p = 0.03$ ) and more male-only groups (90%). The largest cluster comprised 29 B subtype sequences from Vic + WA (age range 23–70 years). HIV-1 subtype C networks (38 groups) included more female/male groups (73.6%) and a smaller proportion of groups  $> 2$  (16%), while CRF01\_AE networks (44 groups) included 59.1% male-only groups, with groups  $> 2$  accounting for 22.7%.

**Conclusion** This nationwide study of HIV-1 sequences involving 4929 patients' highlights the increasing diversity of HIV-1 subtypes within the Australian epidemic, as well as differences in transmission networks within Australia that are associated with these HIV-1 subtypes. These findings provide epidemiological insights not readily available using standard surveillance methods and can inform the development of effective strategies for prevention of new HIV-1 diagnoses across Australian state boundaries.

**Disclosure of interest statement** None declared.

## O20.2 HIV-1 SEQUENCE DIVERSITY AND TRANSMISSION NETWORKS IN WESTERN AUSTRALIA FROM 2000–2014, AND THEIR IMPACT ON BASELINE CLINICAL CHARACTERISTICS

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**Introduction** We have previously described Western Australia as a “hotspot” for HIV-1 subtype diversity in Australia. This investigation characterises this further by studying phylogenetic transmission networks in relation to HIV clinical parameters, from 2000–2014.

**Methods** Baseline clinical data and HIV-1 *pol* sequences were assessed over 4 notification eras for 1021 patients. Phylogenetic tree construction (MEGA V6) was utilised to identify transmission networks, using clustering criteria of bootstrap  $\geq 98$  and genetic distance  $\leq 1.5\%$ .

**Results** The proportion of non-B-subtype HIV-1 has remained stable from 2008–2014 (35% of males (subtype CRF01\_AE  $> C$ ); 80% of females (subtype C  $> CRF01_AE$ ). Non-B-subtype HIV-1 was associated with reduced baseline CD4 count ( $p = 0.005$ ) after adjusting for effects of baseline viral load and age ( $p < 0.001$ ).

More and larger transmission clusters were identified among the B-subtype group ( $p < 0.05$ ), with one cluster of 53 individuals evolving from 2008, characterised by higher baseline CD4 count ( $p = 0.001$ ) and viral load ( $p = 0.01$ ) than ungrouped patients. This cluster has expanded in 2014 (12 new cases) despite high proportions of early diagnoses (25% with acute HIV-1 serology) and treatment uptake (76% with HIV VL  $< 40$ cpm by 2014).

**Conclusion** This 14-year study highlights several challenges in HIV-1 prevention, including delayed diagnosis among cases of non-B-subtype HIV-1, namely migrants and overseas travellers. We have also identified a substantial increase in baseline viral load over time, with higher viral load levels within a large transmission cluster that continues to expand despite frequent early diagnosis and high treatment uptake. These results can inform strategies to end HIV transmission within Australia.

**Disclosure of interest statement** None to disclose.

## O20.3 HIV TRANSMISSION IN MALE SERODISCORDANT COUPLES IN AUSTRALIA, THAILAND AND BRAZIL

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