

detection of p24 antigen with the potential to enhance diagnostic sensitivity in early infections. Future research should focus on better combination antigen/antibody rapid assays or rapid tests to detect nucleic acid to improve the diagnosis of early HIV seroconversion and for early infant diagnosis. Another area of unmet need is the accurate detection of infection in individuals who have received HIV vaccine who may screen positive on rapid tests making distinguishing vaccination and disease difficult. Finally, future directions should combine testing for multiple infections (e.g. HIV, HBV, HCV and syphilis) in a single test kit.

S02.3 EXTRA-GENITAL CT/GC TESTING BY NAATS: USE IN SCREENING AND PREVALENCE OF INFECTION IN MSM, ISSUES IN VALIDATION

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Most *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) infections in men who have sex with men (MSM) are not in the urethra. This has been confirmed often since it was shown by Kent and colleagues, in 2 clinics in San Francisco, (*J. Infect. Dis.* 2003). All of these studies have been made possible by the use of highly sensitive and specific nucleic acid amplification tests (NAATs) that are currently recommended for routine diagnosis of CT/GC infections. The increment in sensitivity for NAATs compared to culture is greater with pharyngeal and rectal specimens than with cervical and urethral specimens; doubling the number of rectal or pharyngeal infections detected.

In MSM attending STD clinics the prevalence of rectal or urethral CT and GC is often in the 7–10% range. GC is found in the oropharynx at about the same level, but CT is less common there, typically 1–2%. Most STD clinics' routine has been to test urethral specimens when evaluating males, with rectal or oropharyngeal specimens tested in symptomatic MSM. We need a paradigm shift: in MSM routine testing of oropharyngeal and rectal sites, as well as urethra, must become the norm. Whether testing should be based on a history of sex practises needs more research.

Unfortunately, no NAATs have received FDA clearance for pharyngeal or rectal specimens. But CDC, recognising the superior performance of NAATs with these specimens, took an unusual step recommending NAATs for diagnosing CT/GC in oropharynx and rectum, despite absence of FDA clearance.

It is possible to use tests that have not received FDA clearance for patient management. Large laboratories can verify use of NAATs for rectal and pharyngeal specimens by following Clinical Laboratory Improvement Act (CLIA) guidelines. We need NAATs with FDA clearance for use on oropharyngeal and rectal specimens to further expand clinical access to these tests.

S02.4 WHAT ARE THE MOST EFFICIENT WAYS TO COMMUNICATE RESEARCH DERIVED INFORMATION TO CLINICAL PRACTISE: THE ROLE OF DIAGNOSTIC AND TREATMENT GUIDELINES, PACKET INSERTS, CLINICIANS' PERSPECTIVE

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When implementing innovative diagnostics or novel therapeutics in medicine, the modern process of knowledge transfer can be described in a stepwise progression from (1) knowledge creation, to (2) diffusion and dissemination, and finally (3) organisational adoption and implementation. We can observe how such processes have contributed to the STI testing and treatment guidelines that we use currently.

As clinicians we strive to keep abreast of developments in our field that enable us to deliver the best quality management to our patients. The experience and intuition of an individual clinician is

valuable, but all our practises should be subject to rigorous evaluation to ensure they are safe and effective. Without such processes, different and conflicting practises can persist, examples of which will be discussed. The need to implement evidence-based best practise has become widely accepted; however, this can still be hampered by financial constraints as well as the unavailability of specific resources locally. In addition, there is often a lag time in our ability to adopt new tests or treatments due to the need to adhere to local or national guidelines or a lack of evidence such as randomised controlled trials that drive changes in practise.

This symposium allows us to examine the most effective ways of getting research into practise and this session will focus on the clinician's viewpoint. Many knowledge gaps remain where further work is needed to better guide STI testing and treatment. More consideration is needed as to how new information is best disseminated to enable our patients to benefit most promptly from implementation of new information.

S.03 - Advancing prevention of sexually transmitted infections through sexual health promotion: Opportunities and lessons learned (organised by CDC/WHO/ECDC)

S03.1 SEXUAL HEALTH: CONCEPTUAL FRAMEWORK AND RECOMMENDATIONS FOR INDICATORS

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Background In 2010 WHO convened an expert consultation to formulate recommendations and strategic directions for sexual health. Two specific recommendations, derived from the consultation were: (a) to develop a conceptual framework on sexual health that clearly outlines the elements of sexual health and how it overlaps and differs from reproductive health and the role of sexuality; (b) to develop, operationalize and promote sexual health indicators. **Method** The WHO Department of Reproductive Health and Research established consultative processes, including a review of the existing evidence, conducted interviews with key informants and held expert consultations to address the aforementioned recommendations.

Results Two documents; *Towards a conceptual framework for sexual health: understanding and improving sexual health for all* and *Core Set of Sexual Health Indicators* were developed during 2011–2013.

The conceptual framework outlines the central role that key sexual health concepts of autonomy, individual choice and protection of human rights play in achieving health and development outcomes. The document proposes new ways of 'framing' sexual health in order to reach the widest audience, which in turn can influence and deliver positive approaches for ensuring sexual health for all.

The proposed indicators cover the following areas of sexual health: adolescent sexual health, family planning, harmful practises, healthy sexuality, sexual dysfunctions and concerns, STI/HIV, and sexual violence. Indicators range from policy, to services (access) to outcome/impact. Most of the proposed indicators have previously been validated, however some new population-based survey indicators have been submitted for validation through special surveys among men who have sex with men and people who inject drugs, to be conducted throughout 2012/2013 in the WHO European region. Preliminary validation results are available.

Conclusion Both documents are concrete steps towards promoting sexual health as a public health concept at international and national levels.

S03.2 SEXUAL HEALTH PROMOTION INTERVENTIONS: RESULTS OF A SYSTEMATIC REVIEW

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Background Population-level rates of sexual health indicators such as STI rates have stimulated interest in a public health approach to improving sexual health in the United States. We used several existing definitions (World Health Organization, U.S Surgeon-General's office, CDC/HRSA Advisory Committee) to derive sexual health principles: recognition of sexuality as intrinsic to individual health and relationships should have positive outcomes for all partners involved.

Methods Studies for a systematic review of intervention literature were drawn from Medline and PsycInfo databases (English language, adult populations, published between 1996–2011, country with developed public health infrastructure). They addressed outcomes in one or more domains: knowledge, attitudes, communication, healthcare use, sexual behaviours or adverse events. Data were summarised in a narrative review organised by population (adults, parents, sexual minorities, vulnerable populations) across domains. Selected data from knowledge, attitudes and behaviours were summarised in meta-analyses.

Results From 9064 studies, 58 were retained in the narrative review. Studies employed qualitative, experimental, pre-post and matched comparison group designs; the number of studies published was correlated with publication year ($r = 0.77$, $p < 0.001$). Interventions were predominantly individual and small-group in-person designs that addressed sexual behaviours (42 studies, 72%) and attitudes/norms (32, 55%). Studies with parents covered communication. All but one study reported at least one positive finding, but many (29 studies, 50%) also reported null findings. The most consistent positive effects on behaviours and adverse events were found for sexual minorities and vulnerable populations; interventions with parents uniformly increased attitudes and communication skills.

Conclusions Sexual health-framed interventions generate positive effects across adult populations, as well as mental and behavioural domains and adverse outcomes. Interventions may be especially effective among vulnerable populations and in improving parent communication. Where scalable, incorporating aspects of existing sexual health definitions into public health may contribute to improving sexual health.

S03.3 ADDRESSING GENDER-BASED VIOLENCE TO REDUCE RISK OF STI AND HIV

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Background Gender-based violence, and gender inequality more broadly, has been found to be associated with increased risk of sexually transmitted infections (STI) including HIV among women and girls as well as among key vulnerable groups such as sex workers. This paper presents the evidence of the increased risk of STI and HIV associated with gender-based violence; and looks at potential pathways by which gender-based violence and STI and HIV are linked.

Methods A systematic review and meta-analysis of studies that measure the association between intimate partner violence and STI and HIV was conducted by the London School of Hygiene and Trop-

ical Medicine and WHO as part of work feeding into the Global Burden of Disease Study estimates on violence against women and its health impacts. Another systematic review of studies that measure association between violence against sex workers and STI and HIV was also conducted by the University of British Columbia, Vancouver and WHO. Other studies and literature were reviewed to identify potential pathways to explain the links between gender-based violence and HIV.

Results The results of the systematic review show that best estimate of association between physical and/or sexual intimate partner violence and HIV was an odds ratio (OR) of 1.52 (95% CI = 1.03 to 2.23) for HIV, from studies from generalized and concentrated HIV epidemics and slightly higher for syphilis, chlamydia or gonorrhoea. These studies, however, are mainly cross sectional population-based surveys among women in the general population. The systematic review of violence against sex workers shows that sex workers from India and US who experience sexual violence have between 2 and 3-fold increased risk of HIV sero-positivity. Sex workers who experience any form of physical or sexual violence by any perpetrator in studies from India (Karnataka), Thailand, USA (San Francisco) also showed increased risk of STI sero-positivity. Studies suggest 4 potential pathways linking gender-based violence and STI/HIV. First, sexual violence can be directly associated with increased STI and HIV transmission. There are also several indirect mechanisms; these include a history of violence in childhood or adolescence being linked to increased sexual risk taking later; and difficulties in negotiation of condom use with the partner. Also, men who perpetrate violence are also more likely to engage in sexual risk taking. Third, fear of violence can prevent women and sex workers from seeking or accessing HIV information and services. Lastly, violence can be an outcome of diagnosis and disclosure of HIV status.

Conclusion Interventions to address the HIV epidemic among women and among sex workers need to address violence as a risk factor. In each setting, interventions need to be based on an understanding of the potential pathways that link violence against women and sex workers to STI and HIV infection. HIV prevention, treatment, and care programmes for women and for sex workers can integrate violence prevention into their risk-reduction counselling and communication, work with men and boys to promote gender equality and reduce violence perpetration, empower women, girls and sex workers, address harmful gender norms that perpetuate the acceptability of violence, and address the harmful use of alcohol. Laws and policies that criminalize sex workers and that perpetuate gender-based discrimination against women and girls also need to be addressed.

S03.4 SEXUAL HEALTH IN THE EUROPEAN UNION: AN INVENTORY OF DATA, PROGRAMMES, INITIATIVES, AND POLICIES

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Background Sexually transmitted infections and HIV represent a major public health challenge in European Union/European Economic Area. In 2011, 346911 chlamydia, 39179 gonorrhoea, 28038 HIV and 19798 syphilis cases were reported to the European Centre for Disease Prevention and Control (ECDC). Improving prevention efforts is therefore a priority, especially among populations groups that are most vulnerable to infection, including young people, MSM, migrants and people living with HIV/AIDS.

Methods A mapping exercise of European sexual health data, programmes, initiatives and policies was conducted aiming to increase the understanding of how HIV/STI can be prevented in the general population and among vulnerable population groups.