Approach for Advancing Sexual Health in the USA" Subsequent steps have included expanding engagement of stakeholders from a broad range of perspectives; steps to evaluate a sexual health communication framework; an expanded CDC sexual health website; efforts to incorporate sexual health into key U.S. policy documents (eg, National HIV AIDS Strategy, Healthy People 2020 key indicators; National Prevention Strategy); planning a national coalition to address sexual health in the general population, adolescents/young adults, and among MSM; and development of a conceptual framework, logic model, and CDC definition of sexual health to inform a final white paper on sexual health.

Conclusions Developing and implementing a sexual health framework in a society with diverse values is challenging, but core public health prevention efforts must be enhanced by a renewed effort to address issues of sexual health and responsible sexual behaviour as an intrinsic part of human health. The use of a sexual health framework has great potential for improving public health outcomes by providing messages that are more effective at reaching the public and providers, enhancing the efficiency and effectiveness of services, and facilitating societal dialogue around sexuality and sexual behaviour.

S10.3 SEXUAL HEALTH IN MSM—COORDINATION AND AGENDA SETTING IN EUROPE

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The European Centre for Disease Prevention and Control (ECDC) has a strong mandate with respect to surveillance of communicable disease in the European Union but a less strong mandate regarding prevention and control as this remains the responsibility of individual Member States. However, ECDC has produced several guidance documents and user-friendly toolkits to support public health decision makers and experts in the Member States to strengthen available prevention and control activities.

In the light of (1) increasing trends of STI and the continuous rise in the number of newly diagnosed HIV infections among MSM and (2) the evidence for increased high-risk sexual behaviour and the widespread sexual mixing among MSM in Western Europe, ECDC has assessed effectiveness of behavioural and psychosocial HIV/STI prevention interventions for MSM in Europe and concluded that there is an overall deficit in outcome evaluations of interventions aimed at reducing HIV/STI risk behaviour among MSM in Europe.

Following this background, ECDC has launched an additional project to include a review and assessment of the following: interventions aiming at knowledge, attitudes and beliefs and influencing psychological and social risk correlates (eg, media campaigns, interpersonal education programmes, sexual health education, safer sex promotion, detached education, outreach work, prevention counselling, peer education, community level interventions). Interventions aiming at lowering the risk of behaviour (eg, condom distribution, provision of paraphernalia for safer sex) The final report contains a compilation and summary of publications regarding outbreaks and increasing trends of HIV and STI, an update of different prevention interventions targeted at MSM as well of interventions planned and carried out within the framework of programmatic responses to the HIV epidemic as well as interventions following outbreaks or other events, a review of evaluation of different interventions and synthesis the evidence base for preventive interventions, and a synopsis of identified knowledge gaps.

Based on the review and the assessment, a platform for multidisciplinary expert consultation will be organised in August 2011 (including epidemiologists, prevention experts, social behaviour scientists, representatives of civil society, Member States, NGOs, and other key stakeholders) to discuss the needs and challenges for coordination at EU level.

S10.4 SEXUAL HEALTH AND PUBLIC POLICY IN LATIN AMERICA AND THE CARIBBEAN (LAC)

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Background Sexual health and its determinants are central to overall well-being and development. Thus, sexual health should be considered by public health as a critical element not only of the population's health, but also as an essential component of the health generated by the population. Regrettably, strict social norms and traditions in LAC have maintained the public discussions about sexuality in secretive and private domains. Moreover, rigid and stereotyped gender roles and social mores and values regarding sexuality have limited the incorporation of this area in the public health agendas, with the only exception of issues related to reproduction.

Methods With the purpose to initiate a process aimed at incorporated the notion of sexual health into the public agenda, in May 2000, the Pan American Health Organization, in association with the World Association for Sexology/WAS (which has since changed its name to World Association for Sexual Health), held a consultation in Guatemala in which a definition of sexual health was coined: a state of physical, psychological, and socio-cultural well-being related to sexuality. The sexual health and the quality of sexual life of individuals, families and communities and the various factors that can affect them were also discussed and avenues for action were proposed.

Since then PAHO has also been engaged in several processes to further advance the sexual health agenda in the Americas, among which the collaboration with WAS in their initiative "Sexual Health for the Millennium", the explicit incorporation of indicators on sexual health in PAHO's Strategic Plan for the Region, active support to the Mexico City Declaration, and several others intended to improve the health of members of sexual minorities and to rekindling of STI programs in LAC.

Results Preliminary empirical evidence seems to indicate that the use of a public health rationale contributes to create convergence in an open debate that would be impossible to hold if other approaches were to be used (eg, based on moral, tradition or assumptions and beliefs). The discussion should lead to the realisation of sexual health, which means adoption of healthy lifestyles and the creation of supportive environments conducive to well-being for all. It would also contribute to the reorientation of the health services to better respond to the sexual needs of individuals through the life cycle, families, and communities.

Symposium 11: Controversies in serologic testing for syphilis (sponsored by the CDC)

S11.1 PROBLEMS ENCOUNTERED WITH REVERSE SEQUENCE SYPHILIS SCREENING

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CDC has long recommended screening for syphilis with a non-treponemal test such as the RPR test and, if reactive, confirming with a treponemal test. Non-treponemal antibody levels rise during

active infection and tend to decline after treatment, so non-treponemal screening identifies persons with active disease who are likely infectious and require clinical and public health interventions. Although treponemal antibodies rise slightly earlier than non-treponemal antibodies, they tend to remain elevated after treatment so their presence does not always indicate active infection. Thus, treponemal tests have not been recommended for initial screening. Also, older treponemal tests that utilise native treponemal antigens, such as the TP-PA and FTA-ABS tests, were thought to have a high false positive rate due to binding of cross-reacting serum antibodies. Newer treponemal tests, enzyme immunoassays (EIAs) and chemiluminescence immunoassays (CIAs), utilise recombinant treponemal antigens which should result in tests with high sensitivity and specificity, capable of detecting small quantities of antibody without nonspecific binding of cross-reacting antibodies. Because EIA/CIA can be automated, U.S. laboratories have begun to screen for syphilis using a reverse sequence with EIA/CIA screening and confirmation of EIA+ sera with an RPR test to identify active infection.

Using this reverse sequence for syphilis screening, discordant sera (EIA+/RPR−) would be expected in patients with previous infection or early primary infection. CDC studies have found that more than half of all EIA+ sera were discordant with EIA+/RPR− results. A recent CDC epidemiologic study found that 32% of discordant sera were due to false-positive EIA/CIAs (eg, EIA+/RPR−/TP-PA−), with rates that ranged from 12% in a high prevalence population to 60% in a low prevalence population.

Discordant sera cause uncertainty about patient management, and the TP-PA test might be a useful confirmatory test with these sera. Recent studies suggest that the TP-PA test has equivalent sensitivity but higher specificity than EIA/CIAs, performance characteristics that are necessary for a confirmatory test. The FTA-ABS should not be used because it has low specificity, its interpretation is inherently subjective, and its performance requires trained personnel and a dedicated fluorescence microscope. Research is needed to better understand the variation in treponemal test performance.

S11.2 WHICH ALGORITHM PERFORMS BETTER, SCREENING WITH A NON-TREPONEMAL OR TREPONEMAL TEST?

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Background A growing number of diagnostic laboratories have recently adopted treponemal EIA tests that permits automation for syphilis screening thus reducing time and labor. This leads to a reverse sequence approach of screening in which an EIA is performed first, followed by testing of reactive sera with a non-treponemal test. The province of Quebec implemented two revised algorithms for syphilis testing on 1 February 2010. The first algorithm (Algo 1) is adapted for low throughput laboratories who initiate testing with a non-treponemal test while the second (Algo 2), which is adapted for high throughput settings, follows the reverse sequence approach. Using these recently implemented algorithms in Quebec, the performance the reverse sequence algorithm will be discussed.
Methods The performance algorithms 1 and 2 has been evaluated with a retrospective analysis of all sera sent by diagnostic laboratories to our reference laboratory for treponemal confirmation between 1 February 2010 and 31 January 2011. Positive sera by both EIA and RPR were not submitted for confirmation.
Results A total of 3662 sera were sent for confirmation during the study period. Only sera from patients not known to have a previous positive treponemal test were analysed. Among the 929 RPR positive or indeterminate sera screened by Algo 1, only 315 (34%) were positive by TP-PA. Among the 904 EIA positive/RPR negative sera screened by Algo 2, 525 (58%) were positive, 333 (37%) were negative and 46 (5%) were indeterminate by TP-PA. The TP-PA negative or indeterminate sera were further tested using a line immunoassay. Among these 379 sera, 35 (9%) were positive and 108 (28%) were indeterminate by line immunoassay. The overall proportion of false positive EIA when reflex RPR test is negative (Algo 2) was 38% compared to a proportion of 66% (614/929) of false positive results when RPR is used as the first screening assay (Algo 1).
Conclusion The higher rate of false positive when sera are screened with Algo 1 can be explained by a low prevalence setting. The high rate of false positive EIA when RPR test is negative (Algo 2) confirms the need to reflexively test all such sera with at least a second treponemal test. Although most EIA positive/RPR negative/TP-PA negative sera truly are false positive EIA results, a second treponemal confirmatory test helps identifying more true-positive EIA positive/RPR negative sera, though more data are needed to generally recommend this approach.

S11.3 PERFORMING A TREPONEMAL TEST TO CONFIRM A REACTIVE EIA TEST: BEFORE OR AFTER THE NON-TREPONEMAL TEST?

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Detection of the host's immune response to infection has been the mainstay of the diagnosis of syphilis for decades. Serological characterisation of *Treponema pallidum* infection presents a number of challenges including the life-long antibody response to treponemal antigens following primary infection, absence of a test specific only to *T pallidum* and lack of a test detecting treponemal antibody that indicates newly acquired infection or response to treatment. Non-treponemal or reagin-based tests offer the best indication of infectious syphilis but themselves can show cross-reactivity to other infections and conditions. These challenges are coupled in much of the developed world with very low rates of infection.

The choice for screening or testing individuals for syphilis can be difficult in that the treponemal tests such as the enzyme immunoassays and chemiluminescent assays, are highly sensitive, can be automated and allow screening of large numbers of sera, whereas the rapid plasma reagin (RPR) test is an agglutination test, cannot be automated and does not easily lend itself to large scale testing. In England & Wales, the National Standard Operating Procedure (VSOP 44) and the Antenatal Screening Committee Laboratory Standards both recommend screening using an enzyme immunoassays, or chemiluminescent assays, followed by confirmation by the Treponemal Passive Particle Assay, to eliminate any non-specific reactivity. Sera giving a positive reaction with both tests will then be immediately tested using the RPR.

The advantages of this approach are that large numbers of sera can be screened in local laboratories, where most will give a negative result, allowing the small number of potentially infected individuals to be quickly identified for further testing. There may be a resulting delay in identifying an infectious case particularly in low prevalence populations, where the laboratory may not perform the confirmatory tests and refers to a regional centre and therefore standards for turnaround times and rapid referral to a specialist physician to ensure timely treatment, especially in maternal syphilis, are essential. In high prevalence areas the RPR is likely to be more cost-effective as a screening test, however, the approach taken should address the population to be tested, the laboratory resources for screening / testing and the prevalence of infection to identify and treat the maximum number of cases for the public health control of syphilis.