S11.4 SEROLOGICAL SCREENING FOR SYphilis: RESEARCH NEEDS

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Background and problem The recent development and implementation of serological screening for syphilis using recombinant protein-based immunoassays has resulted in much confusion about the interpretation of positive results, particularly in low prevalence settings. Early experience suggests that a high proportion of positive tests are not confirmed by either non-treponemal or other treponemal tests. Many questions remain about the accuracy and relevance of these results.

Research needs We will discuss research questions related to the performance, utility, and effectiveness of these tests. Can performance of the existing tests be improved by simple modifications? How can we identify them? Does screening with the EIA tests result in the need for more additional, unnecessary testing? Does the delay in receiving prompt complete serological results result in delayed treatment and increased transmission of syphilis? How much unnecessary treatment results from the use of these tests for screening? What is the impact of EIA screening on public health time and dollars spent on contact tracing? What is the real cost of EIA screening, including the need for additional testing, possibility of additional transmission, and required public health follow-up?

Biological basis for the unconfirmed reactivity in the existing tests - Which Treponema pallidum antigens are recognised by patient sera that are reactive only in the EIA tests?

Do such antisera have cross-reactivity with antigens of other treponemal species found in humans?

Next generation recombinant protein-based antibody tests Are there T pallidum-specific antigens? How can we identify them? Are there antigens for which antibody disappears or declines significantly following treatment?

Conclusions The increasingly widespread use of recombinant protein-based immunoassays has contributed to much confusion in serological testing for syphilis. Research efforts to understand the source of the problems with these first-generation tests are needed to provide clinicians with appropriate algorithms and tools to accurately and rapidly diagnose untreated syphilis in their patients.

S12.2 SCREENING FOR CERVICAL CANCER IN THE ERA OF HPV VACCINATION

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Two efficacious prophylactic vaccines against infections with human papillomavirus (HPV) types 16 and 18 have become available since 2006. Universal pre-exposure HPV vaccination has the potential to reduce the incidence of cervical cancer by up to 75%. Vaccination is also expected to have an impact on the rate of cervical cytological abnormalities and of diagnostic and treatment procedures required to manage women with such precancerous lesions. The traditional paradigm of Pap cytology screening may not be a suitable complementary preventive strategy in the era of HPV vaccination. Once the cohorts of young women who are being vaccinated reach the age of screening the prevalence of Pap smear-detectable abnormalities will decrease substantially, which will ultimately affect the positive predictive value of cytology and decrease its cost-effectiveness. It is now widely accepted that testing cervical exfoliated cells for DNA of high oncogenic risk HPVs is a much more sensitive screening tool than cytology to detect high grade cervical lesions and cervical cancer. Cytologic or HPV-typing trage of HPV-positive women can reveal cases that should undergo colposcopic examination and biopsy and will largely obviate the concerns related to false-positives. With the improved sensitivity to detect existing lesions and the more “upstream” focus on cervical carcinogenesis this strategy could be implemented via longer screening intervals than are currently possible with cytology alone.