

Methods The study randomised 10 paediatric clinics (5 experimental, 5 control) within a large Northern California health maintenance organization (HMO). Clinics in the experimental group received a systems-based clinical practice improvement intervention (CPI) and controls received a traditional provider education intervention. The original study took place between 2000 and 2002 (Shafer *et al* JAMA, 2002). After the study ended, the intervention was translated to the remaining clinics including to the five controls. Data were tracked for four additional years (2003–2006). The proportion of 14–18-year-old girls who had sexual intercourse and who were screened for CT during their routine checkups was calculated using the same methodology as the original study. We assessed changes in the rate variable over time, within sites and between the intervention and control groups using linear mixed effects models with random intercepts.

Results The average screening rate in the intervention group was sustained at an average of 60% during the 4-year follow-up period (CI 0.41 to 0.79) with no significant increases over time. Prior to translation activities, the proportion screened in controls was 21%. After translation activities, the control group exhibited statistically significant linear and quadratic effects of time ($p=0.0019$ by Wald χ^2 test). The estimated rate for the controls was 0.42 (95% CI 0.25 to 0.59) at time 1, increased to a maximum of 0.69 (95% CI 0.55 to 0.83) at year 2.5, then declined to 0.52 (95% CI 0.35 to 0.70) at the end of year 4.

Conclusions This CPI systems intervention was both translatable and sustainable to other paediatric clinics within this HMO.

Health services and policy poster session 4: innovation

P5-S4.01 TRACNET: SUSTAINING mHEALTH AT SCALE IN RWANDA

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TRACnet is an mHealth system that has been supporting the national HIV/AIDS program of Rwanda since 2004 with funding and technical support from the US Centers for Disease Control. The longest continuously operating national mHealth system in Africa, TRACnet was built by Voxiva for and with the Government of Rwanda and the Center for Treatment and Research on AIDS, Malaria, Tuberculosis and Other Epidemic diseases (TRAC Plus). Today, more than 350 facilities offering ART, VCT and PMTCT submit monthly program indicators and receive lab results using the web or mobile phones. 91% of routine reports use mobile phones to report; the rest use the Internet. Using Rwanda's burgeoning mobile infrastructure, TRACnet has achieved 67 months of continuous nationwide routine reporting of data on ART care since 2004. In addition, more than 100 000 patients on care and treatment have been registered. The system includes >8000 reports submitted, >98% reporting rate, 1200 users, >100 000 patients registered. The Ministry of Health and TRACplus are also extending the system to incorporate integrated disease surveillance and response. Voxiva has an active partnership with MTN which is providing a national toll-free line to TRACnet, GPRS SIM cards and free access for users. Data collected by TRACnet is used for a variety of purposes, for example: to monitor program expansion and progress; drive performance-based incentive payments to health center; deliver lab results to facilitate early infant diagnosis; and provide donor reporting. Sustainability is a major focus of the TRACnet program. An innovative framework that addresses all components of operating and maintaining a national enterprise system guides capacity building efforts in collaboration with Rwanda's School of Public Health. This abstracts presents the experience of 6 years of continuous operation of an mHealth solution at national scale.

P5-S4.02 ROUTINE HIV TESTING OF FAMILY MEMBERS OF HOSPITALISED PATIENTS: A NOVEL APPROACH TO HIV TESTING IN NIGERIA, SUB SAHARA AFRICA

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Background In traditional African setting, family members are closely knitted and provide effective social and supportive care for their loved ones during admission in hospitals. HIV testing for family members of HIV positive (HIV+) patients may enhance disclosure of status of spouses, encourage family social support and improve access to HIV services. The objective was to evaluate the approach of HIV testing of family members of both HIV+ and HIV- patients on admission in a large national HIV-treatment centre in Nigeria, West Africa.

Methods This was a prospective study in which HIV testing was offered to consented family members of HIV+ and HIV- patients on admission between January 2009 and June 2010. The family members included spouses, children of patients, parents of paediatric patients and other family members. Analysis was done in frequencies and percentages.

Results 2829 family members of 3284 patients were tested. The details are: spouses, 339 (12%); fathers, 255 (9%); mothers, 1442 (51%); and others family members, 792 (28%). 2630 (93%) of testers were first timers. Most of the testers (97%) had post-test counselling. Overall HIV prevalence was 14%: 7% among spouses; 11% and 7% among mothers and fathers respectively; and 4% among other family members. Discordant status occurred in 19% of couples tested.

Conclusion The results indicate that routine HIV testing of family members of patients on admission is a strategy for identification of large number of HIV infected persons. This method is not only innovative, but also a novel approach effective for scaling up of access to HIV prevention, care and treatment services in sub-Saharan Africa.

P5-S4.03 SYSTEMATIC SELECTION OF SCREENING PARTICIPANTS BY RISK SCORE IN CHLAMYDIA SCREENING PROGRAMME IS FEASIBLE AND EFFECTIVE

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Background Systematic screening for *Chlamydia trachomatis* (Ct) by individual invites ensures general reach, but is less (cost) effective, as it includes people at no or low risk. Selective systematic screening can overcome this. In a large-scale Chlamydia Screening programme in the Netherlands selection by risk score was applied in one region where relatively low prevalence was expected. Here we show the effect of selection on participation, positivity and acceptability in three screening rounds.

Methods Invitees were alerted by personal letter to login to <http://www.chlamydiaatest.nl/> and fill in an 8-item questionnaire before a test could be requested. Questions, based on a prediction rule assessed in a pilot, addressed age, place of residence, education, ethnicity, symptoms, condom use and sex partners. Answers yielded different points accumulating in a risk score. Only invitees with

Abstract P5-S4.03 Table 1 Participation and selection in three screening rounds

	Round 1	Round 2	Round 3	Overall
Invited	13 269	25 189	38 395	76 853
Filled in questionnaire (% of invited)	2973 (22%)	3825 (15%)	4381 (11%)	11 179 (15%)
Average score* (95% CI)	6.16 (6.07 to 6.25)	6.41 (6.33 to 6.48)	6.31 (6.23 to 6.38)	6.30 (6.26 to 6.35)
Sufficient score (% respondents)	1851 (62%)	2480 (65%)	2777 (63%)	7108 (64%)
Package returned (% package requests)	1477 (80%)	1927 (78%)	2149 (77%)	5553 (78%)
Positive test (% of tested)	74 (5.0%)	103 (5.3%)	90 (4.2%)	267 (4.8%)

*Average score of all persons who filled in the questionnaire.

sufficient score of 6 or more could proceed and receive a testkit. Mailed samples were tested at a regional laboratory with NAAT. A sample of excluded participants received an acceptability questionnaire.

Results The selection led to exclusion of 36% of potential participants and a positivity rate of 4.8% among participants (see Abstract P5-S4.03 table 1). Women scored on average higher than men (6.6 with 95% CI 6.5 to 6.7 vs 5.8 with 95% CI 5.7 to 5.9, $p<0.001$). Higher scores were clearly related to higher positivity rates. Persons who were excluded from participation in the first year because of a low risk score had a significantly lower response to the invitation the second round (21% vs 29%, $p<0.01$). The acceptability questionnaire among excluded participants ($n=67$, response 34%) revealed disappointment about exclusion in 30% of them but most approved of the screening set-up; 8% still went to a GP or STI centre for a Ct test.

Conclusions Systematic selection of screening participants by risk score in Chlamydia screening is feasible and successful in realising higher positivity rates than without selection. A previous study showed a population prevalence of 2% in the same population. Acceptability of selection is high but could still be improved by better communication on expectations.

P5-S4.04 THE INTERFACE BETWEEN HPV VACCINE IMPLEMENTATION AND STI PREVENTION: HPV VACCINE DISCUSSIONS AS AN OPPORTUNITY TO PROVIDE MESSAGES ABOUT SEXUAL HEALTH

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Background Early parent–child communication about sex is associated with healthier behaviour during adolescence. Understanding parents' cues to initiating these conversations may provide new opportunities for public health intervention. Human papillomavirus (HPV) vaccine is recommended for all 11–12-year-old girls and is highly acceptable to parents. We sought to characterise mothers' communication with their daughters about HPV vaccine and the potential for HPV vaccine discussions to provide an opportunity for discussions about sex.

Methods During December 2009, we conducted an online survey with a nationally representative sample ($n=900$) of US mothers of adolescent females aged 11–14 years (response rate=66%). We compared the proportion of all mothers using HPV vaccine discussions as a cue to talking about sex vs other potential cues using McNemar's χ^2 . We also assessed whether communication about HPV vaccine was independently associated with communication about sex using multivariate logistic regression. Estimates are weighted.

Results Sixty-five per cent of mothers reported talking with their daughters about HPV vaccine, of whom 41% said that doing so led to a conversation about sex. Thus, 27% of all mothers talked about

sex as a result of HPV vaccine conversations, similar to the proportion talking about sex as a result of some more widely recognised cues, such as their daughter starting menses (21%) or talking about alcohol or drugs (29%), but less than some others, such as their daughters showing an interest in boys (36%; $p<0.05$) or having sex education at school (46%; $p<0.05$). Mothers who had talked with their daughters about HPV vaccine were more likely than those who had not to have ever talked with their daughters about sex (92% vs 74%, $p<0.001$), even after controlling for other cues and factors associated with communication about sex ($OR=3.1$, 95% CI 1.4 to 6.5). Among mothers who talked about sex when talking about HPV vaccine, many felt HPV vaccine provided a good reason to do so (64%) or that it made it easier to start a conversation (33%).

Conclusions HPV vaccine discussions provide an acceptable opportunity for mothers to talk with their daughters about sex at an age when such communication is most influential. It may be possible to capitalise on HPV vaccine discussions to promote parent–child communication about sex and provide messages about sexual health and STI prevention to early adolescents.

P5-S4.05 THE USE OF FINANCIAL COMPENSATION AS AN INCENTIVE FOR INFECTIOUS SYPHILIS CASE FINDING AMONG VULNERABLE POPULATIONS IN EDMONTON, CANADA

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Background Edmonton, Canada has been experiencing a rise in infectious syphilis cases since 2003, attributed to individuals engaging in transactional sex and substance use. As well, Aboriginal people had disproportionately higher rates of the infection. The results of a case study of primary syphilis cases were shared with community organisations serving vulnerable populations to ascertain their suggestions on strategies to increase testing for syphilis among this population. Agencies suggested that compensating clients for syphilis screening at a community organisation would increase testing rates. We sought to determine if more cases among the target population were diagnosed through outreach testing that provided financial compensation than by routine screening methods by other healthcare professionals.

Methods A data extract containing demographics, ethnicity, and risk behaviours for infectious syphilis cases in Edmonton between April 2007 and November 2008 was obtained from the provincial STI database. An additional database, which held demographic and risk group information on participants in the project, was also analysed. Client demographics and risk behaviours were compared using χ^2 or Fisher's exact test for categorical variables and Mann–Whitney for continuous variables.