**Results** 927 household-heads were recruited (including 10 seeds). Full and small RDS-samples were largely representative of the total-population for most variables, but under-represented men who were younger, of higher socioeconomic status, and with unknown sexual activity and HIV status. RDS statistical inference methods failed to reduce these biases. Only 31–37% (depending on method and sample size) of RDS-estimates were closer to the true population proportions than the RDS-sample proportions. Only 50–74% of RDS bootstrap 95% CIs included the population proportion.

**Conclusions** RDS produced a generally representative sample of this well-connected non-hidden population. However, current RDS inference methods failed to reduce bias when it occurred. Whether RDS can collect the data required to reliably remove bias and measure precision during analysis is unresolved. As such, although RDS may be a feasible and cost-effective method for sampling hidden or hard-to-reach populations, RDS should still be regarded as a (potentially superior) form of convenience sample, and caution is required when interpreting findings from RDS studies.

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**S14.4 USE OF RESPONDENT-DRIVEN SAMPLING FOR MONITORING HIV BEHAVIOURS AMONG INJECTING DRUG USERS IN THE UNITED STATES**

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**Background** Approximately 1.1 million persons in the United States are living with HIV and for 18.8% their infections are attributable to injection drug use. In 2009 there were an estimated 5063 new HIV diagnoses attributed to injection drug use. In 2002, CDC developed the National HIV Behavioural Surveillance System (NHBS) to help state and local health departments in areas with high AIDS prevalence monitor behaviours and use of prevention services in groups at highest risk for HIV infection, including injection drug users (IDU). NHBS uses a sampling method most appropriate for each group; respondent-driven sampling (RDS) was chosen as the method for NHBS-IDU. We describe implementation and key monitoring indicators from the first two rounds of NHBS-IDU.

**Methods** NHBS-IDU is implemented in more than 20 cities every 3 years using a standardised protocol for conducting surveys and HIV testing among persons who had injected drugs within the 12 months prior to interview. Data are analysed for each city independently and then aggregated and weighted to form national estimates.

**Results** During the first IDU cycle (NHBS-IDU1, conducted 2005–2006), a total of 13,519 persons in 23 cities were recruited to participate, which resulted in 11,471 persons included in the final dataset. A total of 10,901 persons received 34,038 coupons to recruit others; 13,115 (62%) coupons were returned (range by city: 52.2%–75.3%). Challenges to the underlying assumptions of RDS included a somewhat high (5%) proportion of participants who reported their recruiter was “a stranger” and limited geographic cross-recruitment, suggesting IDU networks were not linked. These issues were found for some cities and were addressed in the operational guidance for NHBS-IDU2, conducted during 2009. Data from NHBS are used to monitor national progress in HIV prevention for IDU; in NHBS-IDU1, an estimated 32.8% of IDU shared syringes, and 65.4% had unprotected vaginal sex; 66.5% had been tested for HIV, and 29.7% had participated in an HIV behavioural intervention.

**Conclusions** Use of RDS for NHBS-IDU has identified challenges in implementation and analysis that continue to further the development of this method for conducting behavioural surveillance among IDU in order to characterise the HIV epidemic in the USA.