Findings: Data from 63 unique study participants, including 27 individual interviews and five separate focus groups, were analyzed. Major themes supported the effectiveness of community-based prevention strategies in community uptake of key messages. Successful approaches for targeting reticent subpopulations included enlisting support from religious leaders and village elders to secure trust from community members. Bidirectional, dynamic methods of communication were also identified as essential characteristics of behaviour change, rather than relying on static materials such as informational posters and pre-taped PSAs. Messages focusing on the lethality of disease were found to reduce essential care-seeking behaviours.
Interpretation: Local Red Cross volunteers and staff are ideally placed for social mobilization efforts to prevent transmission, combat misinformation in the event of an Ebola outbreak. They often have an established relationship with community members and understand the anthropological background, which can be a challenge for incoming foreign aid workers. The community-based work of this cadre is an essential component of the response effort complementary to the clinical work. Findings and lessons learned from this research provide the groundwork for continuing response efforts, as well as for future Ebola and infectious disease outbreaks in similar international settings.
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Unpacking the care cascade: Late presentation to care among HIV-infected drug users in a large urban center of Brazil

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Background: Global and national policies have highlighted the importance of the HIV care cascade to achieve viral suppression and reduce transmission risk. While many HIV-infected people, including drug users, continue to experience delays in accessing services, it remains unknown if risk factors associated with late presentation differ at distinct stages of care. To inform the provision of services, we investigated how risk factors for delays or interruptions in care are similar and different along the care cascade of HIV-infected drug users.
Methods: Data were collected in a cross-sectional study of HIV-infected individuals aged 18 or older and enrolled in HIV/AIDS care at one of three main health facilities in Salvador, Brazil. Eligible participants (n=1970) were interviewed between August 2010 to June 2011. 363 individuals reported drug use at least once in their lifetime. Descriptive and bivariate statistics were conducted to identify risk factors associated with late presentation to different stages of the care cascade among HIV-infected drug users. Late diagnosis, late enrollment, and non-adherence to medication served as measures for experiencing interruptions in care. Covariates explored included socio-demographic profiles, drug usage, sexual health, and health service quality.
Findings: 363 participants, 269 men and 94 women, reported ever using amphetamines/cocaine (n=214, 59.0%), crack (n=87, 24.0%), injecting drugs (n=56, 15.4%), marijuana (n=291, 80.2%), LSD/mushrooms (n=34, 9.4%), or other drugs (n=45, 12.4%). For late testing, male gender (2.54 OR, 1.2-5.4 95%CI) significantly increased odds for late diagnosis, while crack usage (0.41 OR, 1.2-5.4 95%CI), experiencing forced sex (0.38 OR, 0.2-0.9 95%CI), and confidential testing (0.43 OR, 0.2-0.8 95%CI) decreased odds. For late enrollment, unemployment (2.45 OR, 1.0-2.5 95%CI), amphetamine/cocaine usage (1.62 OR, 1.0-2.5 95%CI), and experiencing forced sex (1.95 OR, 1.1-3.5 95%CI) increased odds, while male gender (0.46 OR, 0.3-0.8 95%CI), and post-test counseling (0.50 OR, 0.3-0.9 95%CI) decreased odds. For non-adherence, smoking tobacco (1.92 OR, 1.1-3.5 95%CI) and experiencing forced sex (2.40 OR, 1.2-4.9 95%CI) increased odds.
Interpretation: Risk factors for late presentation among HIV-infected drug users differed at each stage of the care cascade. Some variables, including male gender and experiencing forced sex, were negatively associated with engagement in care at one stage and positively at another. Early provision of quality health services, including confidential testing and post-test counseling, had positive effects across stages of care. Identifying how risk factors for late presentation differ at each stage of the care cascade can inform changes in service provision that improve care continuity, facilitate achievement of viral suppression, and reduce HIV-related morbidity and mortality globally.
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Epidemiological dynamics of bovine brucellosis in India

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Background: Bovine brucellosis is a worldwide, zoonotic disease with significant economic and global health impact. As a predominantly agrarian society, India faces many health-related and socio-economic challenges in managing livestock disease. Mathematical modeling of livestock diseases in developing regions can provide valuable insight into infectious disease dynamics and disease management strategies; these findings help decision-makers in improving public health policy. Our objective was to develop an epidemiological model of brucellosis transmission dynamics among cattle in India, and to estimate the impact of various control strategies. Control strategies include test-and-slaughter, reducing transmission rate, and mass vaccination.
Methods: Data collection and analysis was conducted at Madras Veterinary College in Chennai, India. We developed a deterministic, susceptible-infected-recovered model to simulate brucellosis transmission dynamics in cattle in India, calibrated to endemically stable levels of bovine brucellosis prevalence of 13.5% in India. We then analyzed the epidemiological benefits at various rates of transmission reduction and mass vaccination.
Findings: While test-and-slaughter is an effective control strategy, sociocultural constraints in India forbid culling of cattle on religious grounds. Reducing transmission rates lowered disease prevalence correspondingly, and a one-time vaccination initially lowered prevalence but increased with influx of new susceptible births over time. Reducing transmission among cattle either by restricting movement and contact rate or through vaccination decreases the burden of bovine brucellosis in India.
Interpretation: Vaccination is an effective strategy to eliminate bovine brucellosis in India, but it must be implemented at regular intervals. One potential management strategy may be restricting herd density, although further study is necessary to establish density-dependent effects on disease transmission. A main limitation of this study is lacking data on disease prevalence and population dynamics of livestock. The governmental ban on cow slaughter presents a significant obstacle within this analysis as well as potential management outcomes; nonexistent records