programmes at scale with coverage and quality and 'graceful transfer' of programme funding without disruption.[1]

The publicly funded NACP phase 3 has a much stronger focus on prevention among high-risk groups, but the expansion of the Government's programme without adequate managerial and monitoring support at the State AIDS Control Society (SACS) level has caused serious operational problems in the delivery of quality prevention services. The SACS are ill equipped to take on a vastly scaled up intervention programme for high-risk communities. Some of the state societies face rotation of managers almost every year undermining the effectiveness of programmes.

However, NACP 3 has a lower per capita cost for its interventions compared with the Avahan programme. Whereas the sub-grant level costs of Avahan compare favourably with NACP costs, (US$45—40 per beneficiary) the Avahan programme spends much higher (US$14—5) costs on programme management.[4] To the National AIDS Control Organisation (NACO) and SACS this presents a better model for the more efficient management of focused programmes. Strengthening the management structure of the SACS is an essential prerequisite for the transfer of Avahan programmes, even in better administered states.

The area of concern for NACO is the large overhead costs Avahan incurs in the senior managerial cadre. Avahan spends US$18 per beneficiary on these overheads, whereas NACO spends US$5 per beneficiary.[4] It also includes incentives to attract beneficiaries to service facilities, which a government programme cannot afford. A smooth transfer of management to NACO entails a substantial reduction of these overheads, which account for almost 25% of the project costs.

It is therefore a matter of debate whether a well-run and well-funded community programme such as Avahan should transform itself into a publicly funded programme. The transition model being worked out still provides for technical support from Avahan phase 2 to the transferred programme. Field-level supervision will be strengthened by following Avahan standards. The transition will be only partial during NACP phase 3, with only 10% of the programme component transferred in the first year. Full transfer is envisaged only with the fourth phase of NACP in 2013/14.

The transition model does not take into consideration the new strategies that are now recommended for managing community-based prevention programmes. It is an established fact community programmes are better managed by communities themselves. Avahan itself has started with this philosophy but the transition model does not sufficiently articulate on how to ensure it in a publicly funded programme.

The Commission on AIDS in Asia recommended an alternative model of public private partnerships for financing and managing community programmes.[5] Transfer of funds from government agencies to civil society partners suffers from bureaucratic delays and corruption. A public private partnership model with an autonomous body with government and community partnership provides a better alternative for the transfer of Avahan programmes. BMGF and NACO should carefully examine this as a better model for 'nationalising' the programme. This can also be progressively adopted by NACO for its own prevention programmes in NACP 4 for the more efficient management and utilisation of resources and accountability for performance.

Competing interests None.

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Recreating the impact of interventions in the absence of baseline data: challenges for intervention programmes

Jonathan M Zenilman

Correspondence to Dr Jonathan M Zenilman, Johns Hopkins Bayview Medical Center, 4940 Eastern Avenue, Baltimore, MD 21224-2780, USA; jzenilma@jhmi.edu

Condom-promotion interventions have been a cornerstone of the HIV-prevention effort since the mid-1980s.[1] Initial efforts were largely education-based and used simple process outcomes, such as condom-distribution statistics. Programmes rapidly became more sophisticated, and interventions based on behavioural models were rapidly implemented. One of the most challenging issues in designing and evaluating these interventions has been outcome measures. Ideally, behavioural interventions should be evaluated on disease-incident impact measures. Since HIV incidence is uncommon even in high-incident areas, intervention impact has largely used behavioural measures, such as the proportion of sexual acts in which condoms were used. These are by definition self-reported and subject to bias. In HIV/STD clinical settings, and in the context of prevention intervention studies, there is often implicit social desirability to over-report condom use. These measurement issues have a profound impact on intervention effectiveness evaluation.

Approaches to improving validity have included refining survey report methods. This has included intensive training of interviewers, and using self-administered computerised techniques. Using other biological measures, such as other sexually transmitted infections, is not practical in

most settings. Macroscopic approaches to evaluate condom-promotion effectiveness have been ecological studies, which evaluate community-based disease trends after implementing large structural interventions. For example, after implementation of the Thailand 100% condom programme, there was a rapid decrease in HIV/STI incidence, which was largely attributed to the intervention.

The Avahan investigators have developed and implemented a series of innovative approaches to the evaluation dilemma in an environment where there was no baseline programmatic data, and where there was rapid ramp-up of an intervention. The intervention involved a large population of commercial sex workers. Longitudinal assessment was possible only for a minority of individuals, recognising that these populations are highly dynamic with substantial in- and out-flow over the course of a longitudinally based assessment. Using an innovative approach, the Lowndes team[2] interviewed sex workers and obtained retrospective estimates of condom use for each of previous years, and then imputed those results on an aggregate basis to develop trend measures. The team's hypothesis was that increased condom use and proportion of protected sex acts would correlate with implementation of the Avahan intervention programme. This approach has substantial opportunity for reporting and ascertainment bias, and since the interviews assessed previous behaviours over a period of several years, the observations are not independent. Therefore, external validity of these imputed condom use data is required.

The Avahan programme is unique in that other measurements conducted by the study team do provide the external validity In particular, the paper by Bradley[3] used operational and programme measures to estimate condom use on a population basis, and forge an estimate of the number of condoms actually available through assessing inventories and distribution data. Furthermore, the authors have clearly indicated that there were no systemic biases which changed over time. The results are validated by the reports from the series of Avahan cross-sectional analyses which were simultaneously conducted among both FSWs[4] and clients[5] which clearly indicated that condom use increased over time, especially with paying regular commercial clients.

Field survey research by definition and by practice always involves manipulation of data which is not as clean as one would obtain from a pure randomised controlled trial. Nevertheless, these contributions are incredibly valuable in helping us understand the dynamics of condom-use promotion and behavioural intervention impact as well as the important public-health implications. Whether or not these methods are translatable to other venues remains to be questioned and evaluated. This is a largely illiterate population, which had relatively poor access to health resources, and therefore, one may argue whether there may has been bias either to increase cooperation or to be more honest with their responsiveness. This is also a population where commercial sex work was clearly part of the culture and perhaps not as highly stigmatised as it would be in other venues.

Despite these efforts, it is important to note that the large efforts employed and invested in behavioural intervention had a modest impact but statistically significant over the course of this study. These data highlight the importance of and the necessity to maintain these interventions over time in order to continue HIV prevention efforts.

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