



### Integrating HIV care into community health workers' role is a good model for southern Africa

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A community health worker model of home-based preventive care, the Philani Intervention Programme (PIP), resulted in significantly enhanced maternal and infant wellbeing among pregnant women living with and without HIV in Cape Town townships, researchers report in the advance online edition of *AIDS*, published 18 April 2013.

In this cluster randomised controlled trial, HIV-positive women receiving home visits during pregnancy and the first 6 months of their baby's life were more likely to follow through on tasks relating to prevention of mother-to-child transmission (PMTCT) of HIV. They were also more likely to have infants with healthy height-for-age measurements, when compared with women who received standard clinic care alone.

Among all women receiving home visits, consistent condom use was higher (odds ratio 1.52,  $p=0.002$ ), and their infants were more likely to be exclusively breastfed for the first 6 months (odds ratio 3.59,  $p<0.001$ ). The advantages of this model for women living with HIV went beyond those of adhering to PMTCT tasks. Identification of community health workers (CHWs) with a maternal, child health and nutrition programme helped avoid much of the stigma associated with HIV. Home visits

created a means for ongoing support for all women in the community.

'A CHW approach grounded in cognitive-behavioural skills, with locally tailored content addressing local health risks, may be a strategy that is scalable globally,' write the authors.

In countries faced with HIV funding cuts and severe health worker shortages, where families face multiple health risks, PIP offers a feasible task-shifting model, they add.

Increasing evidence over the past decade supports the integration of HIV care with other health areas. HIV does not affect a child's health in isolation, but is combined with the effects of poverty, malnutrition and other infectious diseases, as well as with the effects of a mother's behaviours.

However, in low- and middle-income countries including South Africa, the authors note, community health workers often focus on single issues, for example HIV testing, tuberculosis or adherence to HIV treatment. In some settings this results in 2 or 3 health workers visiting a household, with each addressing different health areas but repeating some parts of an intervention. Community health workers identified with HIV interventions are more likely to be rejected because of the stigma associated with HIV.

Using a model of pragmatic problem-solving with cognitive-behavioural strategies, the authors trained community health workers to address multiple health issues, notably those of particular concern in pregnancy in South Africa: HIV, alcohol use and perinatal care.

The authors hypothesised that, when compared with women who received standard health care at local clinics, women living with and without HIV who received home visits (the PIP group) would have improved maternal and child health and wellbeing in 5 areas:

- adherence to HIV-related preventive acts (for HIV-positive women this included PMTC tasks)
- child health and nutrition (including alcohol use during pregnancy and breastfeeding)

- healthcare and monitoring
- mental health
- social support.

Forty similar neighbourhoods were selected and matched pairs of similarly sized neighbourhoods (450 - 600 inhabitants) identified. Using a cluster randomised controlled trial design, the researchers randomised neighbourhoods within matched pairs to either home visits (PIP) or standard care.

Local township women recruited eligible pregnant women. Eligibility criteria included being at least 18 years of age, living within the target neighbourhood and being able to give informed consent.

The standard-of-care group comprised 12 neighbourhoods with a total of 594 women, of whom 169 were living with HIV.

In the communities randomised to PIP, in addition to standard care, community health workers visited participants on average 6 times (range 1 - 27) during pregnancy and 5 times between birth and 2 months after birth (range 1 - 12), with each visit lasting approximately 30 minutes. The PIP group comprised 12 neighbourhoods with a total

of 644 women, of whom 185 were living with HIV.

Trained as interviewers, township women assessed participants during pregnancy. Follow-up rates were comparable in both interventions: 92% were reassessed at a median of 1.9 weeks after birth (standard deviation (SD) 2.1), 88% at a median of 6.2 months (SD=0.7), and 88% assessed at both time points.

The authors analysed the effectiveness of the PIP intervention on 28 measures of maternal and infant health and wellbeing for women living with HIV and among all mothers.

Baseline characteristics were similar among PIP and standard-of-care group mothers, with one exception, that mothers in the standard-of-care group had a higher mean number of previous births.

At 6 months after birth, the PIP group had overall better maternal and infant wellbeing,

outperforming the standard-of-care group in 7 of the 28 outcomes.

Looking at specific PMTCT tasks, ART outcomes for adherence at delivery and seeking infant PCR testing were similar. However, among women in the PIP group, cumulative completion of tasks relating to PMTCT, being free of birth-related complications and having the father acknowledge the infant to his family, were more likely. However, they were less likely to know their CD4 cell count.

This model is similar to one the South African government is implementing, with plans to deploy about 65 000 CHWs, the authors note. 'By focusing training on generic, common principles of behaviour change and the specific health challenges of the local community, the potential exists to broadly diffuse the training model,' write the authors.

The programme was built on strong ties with the community leaders, stakeholders

and clinical care sites; giving CHWs a stipend helped sustain the programme, and strict supervision standards were followed.

In addition to sustainability, home visits deal with barriers to obtaining healthcare encountered at clinics: appointments are difficult to schedule, waiting times are long, transport is costly, and mothers have to co-ordinate care among multiple clinics.

The authors conclude: 'PIP provided both task-shifting and site-shifting (from clinics to communities). It allows governments to leverage the investments in HIV to address concurrent health issues. PIP offers an intervention model and evaluation strategy for building sustainable, locally tailored CHW home visiting programmes.'

Le Roux IM, et al. Outcomes of home visits for pregnant township mothers and their infants in South Africa: a cluster randomised controlled trial. *AIDS* 27, advance online edition. [<http://dx.doi.org/10.1097/QAD.0b013e3283601b53>, 2013]

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## SINGLE SUTURE

### *Synthetic malaria drug could stem resistance*

It's a triumph for malaria treatment, but bad news for farmers. A synthetic version of the world's most effective antimalarial drug, artemisinin, can now be made in just 3 weeks rather than 18 months. The advance could help to stem the rise of drug-resistant malaria.

Amyris, a California-based biotech company, has developed a way to get yeast to pump out artemisinic acid, the precursor to artemisinin, rather than extracting it from the sweet wormwood plant (*Nature*, [doi.org/k72](http://doi.org/k72)). Drug firm Sanofi then turns the acid into a drug.

Despite artemisinin's success, the malaria parasite is developing resistance to it. One way to delay resistance is by offering artemisinins combined with other drugs. However, the World Health Organization says 25 countries still allow artemisinin to be sold on its own, with 28 companies manufacturing it.

Jay Keasling, co-founder of Amyris, says he hopes that the synthetic approach will lower prices, nudging out competitors selling monotherapy artemisinin. Farmers who sell sweet wormwood to manufacturers will be encouraged to switch to food crops, he says.

New Scientist, 17 April 2013 (online).