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challenge is accompanied by the high rates of violence, maternal depression, and under-nutrition in these regions. Despite the fact that these economic, social and health problems are clearly interconnected, intervention strategies for the most part address health risks one by one – in a silo fashion. Many donor agencies continue to fund programmes to address problems generated by a single risk factor.

For example, HIV funding cannot be spent on programmes for depressed women, while funding allocated to alcohol programmes cannot be spent on HIV programmes. Integrated interventions, which target multiple risks, contribute enormously to improved maternal and child health, as well as promote a more efficient and effective use of resources.

In South Africa, families are challenged with a generalised HIV epidemic, rife inequalities, and, in some areas of the country, the highest documented rate of foetal alcohol syndrome in the world. A serious risk factor for child mortality and morbidity is the country's problem of poor nutrition or malnutrition. Pregnant South African women with histories of abusing alcohol, mistreatment by violent partners, depression, and living with HIV are likely to have their – and their children's – post-birth trajectories significantly influenced by these risks. It has been shown that, where multiple risks exist, they take a cumulative toll on children's development, early learning and readiness to learn. Readiness to learn is affected by poverty, family

structure, and child and parent health. Most importantly, readiness to learn is now understood as an outcome of the child's entire life course. There is evidence that the detrimental cumulative effect of multiple risks can be mitigated through early intervention.

#### Our intervention strategy: the Philani Mentor Mothers programme

The design of the Philani programme builds on the capacity and cultural values of South Africa, fostering attachment and self-efficacy of mothers with their babies. Mentor Mothers are provided with training, materials and skills to address major community health challenges. They provide support and skills to mothers within their daily lives to implement the recommendations received at clinics. As such, Mentor Mothers potentially offer a sustainable para-professional model for building maternal skills, increasing social support and enhancing health care efficacy.

The Philani+ randomised controlled trial study has been implemented in 24 neighbourhoods in Cape Town townships. Participants in the 12 control neighbourhoods received the Department of Health's clinic-based services. In the 12 intervention neighbourhoods, the Mentor Mothers delivered a generalist intervention during home visits. Each pregnant mother received a minimum of four visits during pregnancy and then between four and eight visits postpartum.

#### The mentoring intervention content focuses on the following areas:

- Hazardous alcohol use,
- HIV/Tuberculosis, nutrition,
- Disclosure,
- Preparing and planning for one's baby,
- Reproductive health,
- Reducing HIV transmission through preventative health/feeding choices and acts,
- Early sensitive parenting and
- Promoting caring for one's physical and mental health during pregnancy.

A particular strength of this study is that it evaluated the implementation and delivery of a “real world” programme by an existing non-governmental organisation, rather than a package developed and implemented by researchers. We have, to date, conducted an assessment during pregnancy (baseline), and follow up assessments at two weeks, six months, 18 months and three years after birth.

#### Intervention results to date

Across the follow-up assessments, at the point to 18 months, intervention mothers were significantly more likely to adhere to the complete protocol for prevention of mother-to-child transmission of HIV; to use condoms; have infants of a healthy size; breastfeed exclusively for six months; take their ARV medication both antenatally and postnatally; have a lower number of recent diarrhoea episodes; and have a longer duration of breastfeeding.

## Home visiting to improve maternal and child health

By Mark Tomlinson, Mary Jane Rotheram-Borus and Ingrid le Roux

Investment in children's early years is critical for improving lifelong well-being, setting the foundations for physical health, interpersonal bonds and attachment, language, and cognitive functioning. But, poverty and the high prevalence of infectious

and non-communicable diseases in low- and middle-income countries (LMIC) often create poor outcomes for children and their caregivers.

Identifying sustainable and effective strategies to improve maternal and child outcomes in LMIC has become a high priority and the

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They were also less likely to engage in hazardous drinking during pregnancy and have infants with multiple clinic visits and episodes of diarrhoea. In addition, infants of depressed pregnant women, receiving home visits from Philani Mentor Mothers, were significantly taller at six months of age than the infants of pregnant depressed mothers not receiving the intervention. At 36 months post-birth, intervention mothers were significantly less depressed compared to mothers in the control group, but were similar in alcohol use and partner relationships. Children of mothers who received the Philani intervention were significantly less likely to be stunted, were less likely to be hospitalised and these children had better vocabularies.

#### The lessons of the Philani Mentor Mothers

We have shown, using a gold standard randomised controlled trial methodology, the effectiveness of a community health worker (Mentor

Mother) model for delivering home-based preventive care that addresses multiple health issues. We focused on the issues most salient in pregnancy in South Africa, namely HIV, alcohol use, nutrition and perinatal care. These were concurrently addressed with a model of pragmatic problem-solving with cognitive-behavioural intervention strategies. The relationships among initial and sustained maternal risk behaviours and the buffering impact of home visits and social support have been shown in our study.

The gains from our study are significant, but modest. However, small gains often become magnified over time. Pregnancy and infancy are critical developmental phases with lifelong consequences; and small changes that become habits can have a substantial impact over a lifetime. It is important, however, to note that a substantial minority of children are missing key supportive services. For example, even 36 months post birth, 20% of households are not

receiving a child grant, while two of five children get no preschool or crèche experiences. This suggests it may be useful to maintain frequent community health worker visits past the first six months of life. While the importance of early intervention is beyond dispute, it is possible that the benefit of interventions in the first 1 000 days, require functioning preschools, and crèche services, in order for early benefits to be sustained. In communities without such support, it is perhaps important to continue home visits by Mentor Mothers over the 36-60 months post-birth period, which would cover the phases of children’s language development, goal setting, and key processes central to cognitive and socio-emotional development. Children would likely also benefit indirectly by the improved health of their mothers, if visits were extended.

We believe that the Philani intervention is a model for countries facing significant reductions in funding for single health issues and



whose families face multiple health risks. We are continuing to monitor mother and child progress over time and are currently close to completing the follow up of the five-year-old children.

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