# Packaging Solutions for Nevirapine

## Health need

Clinical trials have shown single-dose nevirapine (NVP) to be a low-cost, efficacious therapy for prevention of mother-to-child transmission (PMTCT) of HIV-1. The single-dose therapy includes a 200-mg NVP tablet taken by the mother at the onset of labor and 0.6 ml of NVP oral suspension (NVP syrup) given to the infant within 72 hours of birth.

Achieving widespread use of NVP for infants in developing countries has been challenging because of the high prevalence of births outside the health care system, the required timing for the dose, and the limited reach of antenatal care and PMTCT services. Programs have begun giving the NVP tablets to HIV-positive pregnant women during antenatal visits to take home so they can have the tablet readily available. Fewer programs have been providing the infant dose of NVP syrup to take home, due in part to the lack of a simple, robust, and tamper-evident single-dose package.

## Technology solution

Improving single-dose packaging of NVP syrup for PMTCT programs is the primary objective of a public-private partnership among United States Agency for International Development, Boehringer Ingelheim (BI) (manufacturer of Viramune®* brand NVP), and PATH. PATH has identified and evaluated the function and acceptability of numerous single-dose packaging candidates. BI has tested the physical compatibility of the candidates with their NVP syrup. USAID has provided funding as well as guidance on field needs.

The result was a simple yet elegant solution that has been successfully piloted and introduced in Kenya. PMTCT clinics are provided with supplies of two components—1-ml Exacta-Med®† dispensers (an oral-dosing syringe) and self-sealing foil laminate pouches designed by PATH to surround and protect the dispenser once the nurse fills it with the infant dose of NVP syrup. The pouch is also labeled with pictorial and expiry information that reminds the woman of proper use if she gives birth outside the health care system.

## Current status and results

PATH worked with the Elizabeth Glaser Pediatric AIDS Foundation, Family Health International, and the National HIV/AIDS and the Sexually Transmitted Disease Control Program of Kenya to evaluate the pouch and dispenser approach in PMTCT programs in Kenya. A pilot introduction was completed in July 2006. Results indicated high acceptability among health workers and HIV-positive mothers and confirmed the value of the approach. Country-wide introduction of the NVP infant-dose pouch is underway in Kenya. BI now makes the pouches available at no cost through its PMTCT Donations Program. PATH has developed a set of resources to support organizations considering introduction of the NVP infant-dose pouch which can be downloaded from PATH's website at http://www.path.org/projects/nevirapine_pouch_resources.php.

**Viramune is a registered trademark of Boehringer Ingelheim.*

*† Exacta-Med is a registered trademark of Baxa Corporation.*


PATH/Patrick McKern

**Nevirapine packaging developed by PATH.**

**"Many babies will benefit…it will make a difference."**

Emily, Nurse at Vihiga District Hospital in Kenya.

## Availability

The NVP infant-dose pouch is currently available to qualifying programs at no cost through the PMTCT Donations Program along with the Exacta-Med Dispenser, manufactured by Baxa Ltd. For more information on how to receive the pouch, dispensers, and nevirapine, visit www.pmtctdonations.org. For information regarding this project, contact Adriane Berman at aberman@path.org.

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