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Pharmacy student creates medication-safety program in Uganda

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While Melchior was in Uganda, she got to meet a young girl, Mary, that her family has been sponsoring for years. She is pictured here with Mary and her family in the Ugandan village of Nangalama.



Melchiors solicits feedback about the nutrition guide and medication guide from two nurses from the Ibulanku clinic.

Last summer, when Meg Melchiors arrived at the small clinic in Ibulanku, a village in Uganda's Iganga District, she discovered medications were being dispensed in small white paper envelopes with cryptic numerical instructions.

When the 25-year-old UW pharmacy student asked about an envelope with "1×3" written on it, for example, the nurses told her it could mean either "take one tab every three hours," or "take one tab three times a day." The medication-inventory system at the clinic was also followed loosely at best. Nurses generally relied on memory for record-keeping, which posed risks for unintended shortages of important drugs when they are in need.

Melchiors, therefore, spent part of her summer working with the clinic's health providers to better organize its pharmacy and dispensing system. She produced a guide for the clinic that covered topics such as medication safety, medication errors, prescription labeling and patient education. Further, upon developing relationships with local villagers, she talked to them about the importance of drug safety.

She did all this through the Uganda Village Project (UVP), an organization founded by the International Federation of Medical Students' Associations that sends students to Uganda to participate in health care service projects. While in the African nation with UVP, Melchiors also collaborated with a team of U.S. premedical and medical students on other projects in the Iganga District focusing on dental care, eye care and nutrition.

The pharmacy project was the first such project that UVP had ever implemented, thanks to Melchiors.

"Before I started, the UVP director asked me if I would be willing to lead a pharmacy project, as the healthcare team had never done work along those lines," she said. "So I was absolutely thrilled to do so."

Melchior learned that at the Ibulanku clinic, there was no pharmacist. There was a doctor who basically worked 24 hours a day, a head nurse who facilitated most of the medical seminars, and a few nurses. One of the nurses was trained to work in the clinic's dispensary, but she had not received any additional training about medication use or management.

As such, Melchior's goals for the project at the Ibulanku clinic were threefold — to promote that all medications be clearly labeled and explained to each patient; make sure patients are educated properly on their diagnoses, disease states and treatments; and provide the clinic staff with the basic facts about the most commonly used medications.

Ensuring patients were as informed as possible was especially important given some of the cultural notions that existed in Uganda. For example, Melchior learned that some Ugandans go to witch doctors for healing and are distrustful of Western medicine. Others believe that a pill — any pill — from a clinic is the answer to any sickness.

For her part, she tried to make the case that drug safety and adherence could help the villagers live longer and healthier lives. One topic she could discuss that generally met with a receptive ear was malaria. In 2006, the disease inflicted 10.6 million Ugandans — more than one third of the country's population — according to the World Health Organization. It killed approximately 47,000 people there.

So people listened when Melchior explained that people with malaria who go to a natural healer or don't take their medicines have a diminished chance of survival. She helped them understand that people who go to the clinic, receive their anti-malarials and take them appropriately have a better likelihood of survival.

This dialogue opened the doors for her to talk about drug safety in general. Overall, she said, people were receptive to her.

While the training and resources she provided were a great start, she knows change takes time. That is why she helped the clinicians and community leaders set long-term goals for maintaining the changes. She also left recommendations for the villagers so that UVP's work could evolve over time to best serve the needs of the community.

"Often, medical relief just serves as a Band-Aid that seems to temporarily solve problems," said Melchior, "but it will not help the community in the future. UVP goes about making sustainable changes by working with community health care providers and leaders to educate and empower them so that changes will last even in the absence of activity of UVP."

Further, she created goals and recommendations for the next team of UVP students to carry on her efforts. In fact, depending on how things unfold, her work could lay the framework for UVP to implement similar programs in community clinics throughout Uganda.

She plans to return to Uganda after she finishes her residency in 2010 to help UVP try to make this happen. She also hopes to focus on preventing mother-to-child HIV transmission through appropriate use of anti-retroviral medications. And she will help with other health care projects accordingly.

Not only does Melchior hope this will set the stage for a career in international pharmacy, but she also hopes it will allow her to reconnect with the Ibulanku villagers whom she came to love.

They were, she said, kind, generous, hospitable and humorous. She recalls many shared dinners of rice, posho — a porridge-like cornmeal product — and African milk tea with her neighbors, as well as many mornings spent helping them weed the maize and cassava crops.

In her spare time, she rafted on the Nile River and bungie-jumped off of a tower that hung above the river.

Needless to say, she looks forward to returning.

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