

New Steps Toward Mobility for Georgia's Amputees

By Barbara Ruben

Four years ago, a 17-year-old boy in Georgia crossed a bridge on the way home from a friend's birthday party. It was the last time he would walk for a long time. After tripping a landmine on the bridge, he became one of more than 3,500 people in Georgia to lose a leg due to civil war and ongoing conflicts in the country.

"After the accident, my ears were ringing, my brain went numb and I felt dizzy," he recalled. "I looked down, and there was just blood everywhere."

But because few artificial limbs are manufactured in Georgia, the boy had to wait more than a year to be fitted for a prosthesis and slowly learn how to walk again. The International Committee of the Red Cross, which provided the boy with an artificial leg, estimates that there are about 7,000 people in Georgia waiting for artificial limbs and that half of those are due to war injuries. Most of the others lost legs as a result of diabetes.

The Tbilisi, Georgia-Atlanta, Georgia partnership hopes to make more prostheses available by helping increase production capacity. Currently, there are three facilities operating in the republic, two of which are run by the Red Cross. Partners plan to open another prosthetics workshop next to Tbilisi's Traumatology Hospital.

"A particular tragedy and need revolves around the fact that many of these are individuals in their most productive years, and without a limb they can do little more than sit around their homes in despair," said Ken Walker, MD, a professor at the Emory University School of Medicine in Atlanta

Last year, the partnership obtained surplus equipment used to make prostheses from the Fitzsimmons Army Hospital in Colorado, with the help of the US Department of Defense's Operation Provide Hope. With the cooperation of the Georgia Ministry of health, they installed it at the Traumatology Hospital. The Red Cross is currently using some of that equipment, and additional equipment from the Army hospital will be sent to Tbilisi in May or June, said J. Robin de Andrade, MD, professor of orthopedic surgery at Emory University School of Medicine and chair of the Amputee Clinic at Veterans Administration Medical Center in Atlanta. When this equipment is fully functioning, de Andrade said he hopes that 100 prostheses can be produced a year.

In addition, partners are now working to raise the \$100,000 needed to purchase equipment that will computerize measurement for artificial limbs, a method that will both make fitting more precise and enable technicians to become far more productive. Without computer technology, each artificial leg requires between 12 and 20 measurements and modifications, the most time-consuming part of the production process. Using what's known as CAD-CAM technology, only one measurement session is needed, and each technician can turn out about 20 prostheses a week instead of the one or two possible through low-tech methods. Each artificial limb costs about \$115 to produce.

Partners hope to eventually set up 12 regional centers that, in addition to providing general health care services, information and training, would be used for taking measurements for artificial limbs. These digitized measurements would be sent by modem to a prosthetics production center in Tbilisi.

"One reason the CAD-CAM technology is so important is that prosthetics don't last very long. The stump changes dimensions and refittings occur frequently," Walker said. "Young people in particular need different prosthetics for different purposes, working, hiking, etc. We want to give the Georgians the ability to provide the large number of prostheses that are needed."

To help meet the need for more artificial limbs, the Georgian Minister of Health has committed 50,000 lari (about \$38,500) for the project. Emory University School of Medicine plans to contribute another \$50,000.

In the meantime, de Andrade said his goal is for six to 12 artificial limbs to be produced by this summer on the equipment that has already been donated.

"That's a little dent in the overall need," he acknowledged. "But it's a start, and from there we can start really helping those in need."