for example, requires either an expensive flight or a torturous 7-day hike. And the 800 different languages spoken on the island reflect cultural variation, including sexual practices that can affect transmission, such as polygamy and the age of initiation. “What you say about one place is not what you say about another place,” says social anthropologist Angela Kelly-Hanku, who lives in Goroka and works on Val defy’s team.

One surprising cultural factor that may have had a role in curbing the epidemic is traditional penile cutting. Several large-scale studies in Africa have shown that medical circumcision—which removes the entire foreskin under sterile conditions—reduces the risk of sexual transmission of HIV from women to men by about 60%. While medical circumcision is uncommon in Papua New Guinea, up to 70% of men in some communities report having had a traditional penile cut as a boy, a procedure that involves cutting different types of slits into the foreskin but not removing it.

Following a recommendation from UNAIDS and the World Health Organization in 2007 that prevention programs in high-prevalence countries should incorporate male circumcision, PNG health officials became interested in launching a national program. With funding from the Australian government, Vallely’s group collaborated on a 4-year study to gauge the procedure’s acceptability and potential impact. What they found surprised them.

When the researchers assessed penile cutting around the country, the places that practiced it the most had the lowest HIV prevalence. “It may help explain why the epidemic looks as it does in PNG,” Vallely says. “To be honest, we never imagined when we heard of these practices that this would be the result.”

Prevention, Papua New Guinea style

Early on a Friday evening in March in Kids Kona, one of the many villages tucked into the hills that surround the town of Goroka, some 75 people cram into a mud-floored hut with a corrugated tin roof and excitedly wait for the show to begin. This village cinema, or haus piksa in the local pidgin, has a generator that provides electricity—a rarity here in the country’s Eastern Highlands province—and, of course, a screen, which in this case is an old TV set. The standing-room-only audience is so swept up by tonight’s video that no one leaves when the generator cuts out, candles are lit, and someone has to make a trip to town for more fuel.

This is not Rambo or a rugby match, both of which are wildly popular in this country known by the shorthand PNG. The slick video, a University of Goroka production titled One More Chance, is part of an innovative campaign to prevent HIV’s spread, which has hit some PNG communities hard (see main story, p. 158).

It tells the story of Siparo Bangkoma, a local man whose complicated family life was turned upside down by HIV. Siparo became deathly ill from the virus, but he hid his infection from his two wives until the second wife became weak and confronted him. When he confessed, the ailing wife told the other. Both women discovered they, too, had become infected. Rage eventually gave way to acceptance, and the two mothers decided they would raise their children together, but agreed that Siparo would no longer have a physical relationship with the second wife.

Siparo is at the screening and speaks to the crowd when the video ends. “You can get HIV and you can live with it,” he announces. “I’m happy because I can stand in front of you and talk out. In my country, many people feel ashamed. I’m not ashamed. God gave me one more chance. Make sure your children are educated. This is a true story. It’s my life story. You have to change your attitude and thinking,” he says.

“This is a way to do HIV prevention that’s really true to PNG,” says Angela Kelly-Hanku, an Australian social anthropologist who studies HIV/AIDS with the PNG Institute of Medical Research in Goroka, where she lives, and the University of New South Wales in Sydney. After the screening, Kelly-Hanku shows off a bottle of antiretroviral (ARV) drugs. “When you take the ARVs, it’s like putting a gate around your garden,” Kelly-Hanku says. “Now, the pigs can’t go inside.”

The student filmmakers who produced One More Chance have made four other HIV/AIDS videos as part of a project called Komuniti Tok Piksa. They target rural communities, which are missed by mass media campaigns and often have low levels of literacy, teaching people how HIV is spread, the importance of testing, and that lifesaving treatments exist. The stories are told in pidgin.

Verena Thomas, who leads the project, says the 110 screenings so far have all been well attended. Says Thomas: “People on the screen are the heroes, whether they’re Rambos or Siparos.”
In collaboration with colleagues in PNG, Vallely and co-workers are now conducting epidemiologic studies to see if the link holds up. At UNSW’s Kirby Institute for Infection and Immunity in Society, another group is doing lab studies with foreskins from PNG to explore fundamental mechanistic questions: How does medical circumcision thwart HIV, and does traditional cutting have any impact (see sidebar, right)? Vallely says if traditional penile cutting does prove capable of lowering the risk of HIV infection, it may ultimately alter public health campaigns. “We don’t want to stop something that prevents HIV from taking off in PNG,” he says.

Watson maintains that confusion about the epidemic’s contours and its drivers wastes precious resources. In 2012, most government spending went toward managing the response, not delivering services like prevention, treatment, and care. “We have a very top-heavy national response that gobbles up nearly 80% of the funding,” he says, noting that the National AIDS Council employs more than 100 people.

The painful Catch-22 is that PNG is left with little money to improve surveillance and figure out how best to curtail its epidemic. “We don’t have the resources for that because we’re still responding to an epidemic we don’t have,” Watson says.

Stuart Turville had a surprising item to declare last September when he arrived here from Papua New Guinea (PNG) on a Friday evening flight: a cooler that contained five freshly harvested foreskins packed on ice. “Coming in with samples like this is always somewhat amusing to customs officials in Australia,” says Turville, a virologist at the Kirby Institute for Infection and Immunity in Society in Sydney.

Turville’s team regularly imports this precious cargo from its neighbor to answer a fundamental but underexplored question: How does male circumcision protect against HIV? Studies have clearly shown that medical circumcision works, but confusion remains about the mechanism. Foreskins surgically removed from men in PNG who opt to go through medical circumcision offer an intriguing opportunity to address the question. Whereas some had fully intact foreskins, many had various traditional penile cuts as boys (see main story, p. 158).

Turville is leading lab studies that incubate these different foreskins with fluorescently labeled HIV (pictured). That allows researchers to assess how the transmission process is affected by factors that vary among the foreskins, including the degree of keratinization (in red) and the presence of immune target cells.

Surprisingly few groups have published studies about the protective mechanism of circumcision, says virologist Thomas Hope of Northwestern University’s Feinberg School of Medicine in Chicago, Illinois, a veteran researcher of foreskins and HIV who has begun collaborating with the Kirby Institute group. “And a lot of it is wrong.”
Prevention, Papua New Guinea style

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