

# GLOBAL HEALTH

## Innovation Insight Series

*Syringes that have  
been saved for reuse*



Photo © SafePoint

## SAFEPOINT II: Sustaining Adoption

EAST SUSSEX, UNITED KINGDOM

ESTABLISHED 2005

MARC KOSKA, FOUNDER

### THE PROBLEM/SOLUTION SPACE

Each year, 17 billion injections are given around the world, more than 7 billion of which are unsafe.<sup>1</sup> An unsafe injection occurs when a needle or syringe is reused between patients without sterilization.<sup>2</sup> As recently as 1998, the World Health Organization (WHO) advocated needle and syringe reuse in developing countries (up to 200 times in some vaccination programs).<sup>3</sup> However, this practice is now widely understood to be linked to significant morbidity and mortality as blood-borne diseases are inadvertently transmitted from one patient to another. The transmission of hepatitis B and C and human immunodeficiency virus (HIV) are particularly common. Unsafe injection practices are conservatively estimated to account for more than 1.3 million deaths and \$535 million in unnecessary costs each year.<sup>4</sup>

### ABOUT AUTO DISABLE SYRINGES

In 1984, Marc Koska committed himself to addressing the threat of unsafe injections. He spent nearly 10 years in the field, investigating all aspects of the problem: clinical behavior, drug use, patient activity, syringe manufacturing/molding, distribution, disposal, procurement, public health, policy, and funding.<sup>5</sup> The result was the K1 Auto Disable

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(AD) syringe, which physically prevents reuse by locking the plunger once it has been fully depressed. Koska's design was not the first AD syringe, but it was intentionally simple to help keep costs low. The K1 could be manufactured for only about a penny more per unit than a regular low-cost syringe,<sup>6</sup> and it was engineered to fit on standard syringe manufacturing machines to prevent companies from having to invest in new manufacturing equipment. He patented the K1 in 1997 and established Star Syringe as a vehicle for openly licensing the technology. By the mid-2000s, Star Syringe had 9 to 10 licensees that had collectively sold roughly 2 billion syringes around the world.

### ONE CHALLENGE: SUSTAINING ADOPTION

After SafePoint launched an aggressive public awareness campaign in India in 2008, 11 of the country's 26 states switched to AD syringes in all of their public health facilities. "But two of those states," explained Koska, "recently went back to using normal syringes. What it came down to was a large company dumping normal syringes into those two states free of charge."<sup>7</sup> Medical equipment manufacturers often sold or gave away syringes to help them gain market share for other products in their catalogs. According to Koska, this company, potentially concerned about losing its foothold as AD syringes became more widely used, not only flooded the market with free product but sought to discredit SafePoint's messages about the risks of unsafe injections. Koska realized he needed a more comprehensive adoption strategy to combat this kind of activity.

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### THE SOLUTION: ALIGNING STAKEHOLDERS

When SafePoint decided to expand its efforts to Africa, where 20 million medical injections contaminated with blood from HIV patients are administered each year,<sup>8</sup> Koska chose Tanzania as one of the organization's first targets. In planning the approach for driving AD syringe adoption in the country, "I had the chance to really slow down," he said. "And over the last year I've worked out a much more holistic approach, so that when it goes in it sticks, and it sticks completely."

Koska laid out six key stakeholder groups that had to be aligned to make a lasting change in Tanzania. He also described SafePoint's plans for coordinating them, which were directly related to the creation and launch of a program he called LifeSaver.

#### Ministry of Health

At the highest level, the Ministry of Health must be committed to adopting AD syringes. "You need them to be proud and stand up and stop the naysayers in the background," explained Koska.

To help mobilize the Ministry of Health in Tanzania, SafePoint captured undercover video of syringes being reused to inject multiple patients. In one of the most particularly troubling clips, a health worker is shown injecting a young man who has HIV and syphilis and then using the same syringe moments later to give a shot to a one-year-old girl. "I went to see the Minister of Health and showed her the film," Koska recalled. "She was so distraught and said, 'What are we talking about here? What's the solution? Let's get on

with it.' A meeting scheduled for 10 minutes went on for two hours."<sup>9</sup> Ultimately, Tanzania committed itself to becoming the first LifeSaver country by adopting the program and mandating the production and use of only AD syringes for both immunization and curative injections across the nation.



Photo © SafePoint

*Marc Koska (right) with Dr. Lucy Nkya, Deputy Minister for Health and Social Welfare, Tanzania*

in addition to helping make the ISO/WHO quality standards well known, SafePoint invited all global AD syringe manufacturers to include a new LifeSaver symbol on their AD syringes that met these requirements. The logo was distinctive and easily recognizable to Tanzania's standards agency, as well as to health workers and patients alike. The LifeSaver symbol was intended to act as a visual guarantee of a safe injection.

### Donors

Donor education was equally as important. For example, an organization such as USAID provided \$80 million in injectable drugs to Tanzania last year, but no syringes.<sup>10</sup> Local health systems, hospitals, and clinics were entrusted to independently decide which types of syringes to acquire, from which manufacturers, and to set their own policies around their use (or reuse). "So what I've done," Koska said, "is I've gone to the donors to make them aware of this issue. And they've said, 'Well, so what? Obviously they use one syringe per injection.' Well, obviously not because in Tanzania there are 45 million people, and last year health providers in the country only bought 40 million syringes. But everyone in Tanzania has an average of five injections each per year, so the country needs 220 million syringes. Therefore, every syringe is being used five or six times." Koska's goal was to persuade the big aid agencies to work together to provide the needed funding to purchase and supply enough AD syringes to cover all injections in the country. He was able to rally them around the value of this incremental investment using data from the hospitals where SafePoint had been working. These health providers estimated that for every \$1 they spent on AD syringes, they could expect to save approximately \$280 in additional treatment costs from complications linked to unsafe injections.<sup>11</sup>

### Standards Agency

One of the next steps was for the Ministry of Health to coordinate with the Tanzania Food and Drugs Authority (TFDA) to help ensure that only AD syringes came into the country. "There are no manufacturers in Tanzania, but there are manufacturers who supply Tanzania," said Koska. These organizations had to be told that the Tanzania government would only be giving import certificates for AD syringes made to a particular ISO standard or approved by the World Health Organization (WHO).

### Manufacturers

In parallel, all manufacturers supplying Tanzania had to be informed on how to produce and provide the right product. In



### Health Workers and the Public

The final two stakeholder groups that SafePoint needed to align around the LifeSaver program were the health workers and the public.

In countries such as Tanzania, health workers were highly trusted. As Koska described, “People of any age will go and have an injection blindly because the lady in the white coat has superiority over them.” Despite the trust patients placed in them, health workers perpetuated the problem of unsafe injections by reusing syringes for any number of different reasons. For example, some were told by their clinic or hospital administrators to reuse them to keep costs down. While they felt guilty doing so, some feared losing their jobs if they protested.<sup>12</sup> “But we need them to not be vilified for their past,” said Koska. “Instead, we need them to join in with the glorious future. The interaction between the public and the healthcare worker really needs rebuilding.”

SafePoint hoped to accomplish this through a system that engendered increased knowledge, transparency, and positive reinforcement. As part of the LifeSaver program, health workers and administrators would be educated on what it means to deliver a safe injection (along with the government mandate requiring them to do so). Once they had completed this training, they would be given a green LifeSaver badge to wear. In parallel, LifeSaver posters and pamphlets would be widely distributed to educate the public that they should demand injections from syringes that come out of a sealed package, are used once, and then safely discarded. After conducting market research, said Koska, “The messaging to the public has to be, ‘Hey, would you share your toothbrush? Well, then you shouldn’t share your syringe.’ Not ‘You’re going to die of AIDS, and it’s a horrible death.’ Just ‘It would be gross, so don’t do it,’ and that’s good enough.”

The positive reinforcement part of the plan would be enabled through cell phone technology. Specifically, SafePoint had developed a free text message system with the help of Hewlett-Packard. Every time a health worker delivered a safe injection, s/he would ask the patient to submit a text message to the Ministry of Health confirming that the injection was delivered according to the simple LifeSaver protocol. At no charge to the patient, s/he would enter a 10 digit number that identifies the county, village, clinic, and individual health worker. When the health worker received 500 “votes” from patients, s/he would receive a thank you letter from the Minister of Health. Importantly, the health worker would also be sent a gold LifeSaver badge to replace his/her standard green one. “Now, if I’m a worker in a clinic with six people and I’m the first one to get a gold badge, what does my colleague next to me want? She wants a gold one, as well. She doesn’t want to be stuck with green! It’s such a small thing, and yet when we piloted this system they all wanted the gold badge straightaway,” Koska noted.

With these six major stakeholders groups aligned, SafePoint felt confident that Tanzania would be better positioned to sustain the adoption and consistent use of AD syringes in its health facilities across the country. “We piloted all this just recently [in November 2011],” Koska reported. “It worked beautifully. It’s a fantastic system.” Moreover, the SafePoint team believed it was a system that would lead to mutually beneficial results for all of the involved parties. The public would benefit from lower transmission rates of dangerous blood-borne diseases through unsafe injections. Health workers would have clear rules to follow, positive reinforcement, and potentially a greater sense of satisfaction from their work. Manufacturers would make more money as they see the number of syringes they import into Tanzania climb from 40 to 200 million. Donors would have tangi-

ble proof from the text message/mapping system that their money is being used wisely. And the Ministry of Health and TFDA would have shown their ability to enact positive change and generate quantifiable results. “So, when the Minister needs more money from the major international aid organizations for her next big project,” Koska commented, “she’s going to get it instantly because she’s now a trusted user of those funds.” ♦

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#### NOTES

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- 5 SafePoint Media Pack, <http://safepointtrust.org/resources/Safepoint%20Media%20Pack-1.pdf> (February 9, 2012).
- 6 Jenn Warren, “Slumdog Scandal,” *The Sunday Times Magazine*, March 22, 2009, [http://www.jennwarren.net/content/SafePoint\\_SundayTimes.pdf](http://www.jennwarren.net/content/SafePoint_SundayTimes.pdf) (February 9, 2012).
- 7 All quotations are from an interview with Marc Koska conducted in December 2011 unless otherwise cited.
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- 9 Sarah Boseley, “The Case for the Self-Destructing Syringe,” *The Guardian*, October 28, 2011, <http://www.guardian.co.uk/world/2011/oct/28/self-destructing-syringes-needles-tanzania> (February 13, 2012).
- 10 According to Koska.
- 11 Marc’s Projects, <http://www.marckoska.com/projects.htm> (February 13, 2012).
- 12 Warren, op. cit.