

Easier Than Taking Vitamins

By SAM LOEWENBERG

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Fixes looks at solutions to social problems and why they work.

When a great invention comes along, it often becomes part of our lives so fast that we barely even notice it. We take it for granted. Who remembers life before television, the Internet or GPS?

But what if there was a great invention that barely got picked up, even after a decade? Can you imagine if the iPhone had been invented in 1997, and we were only just getting to use it now?

That's the story with Sprinkles, an innovative treatment for one of the most pervasive problems affecting the world's children, and one that goes largely unaddressed.

About 300 million children — nearly half of the world's children under the age of 5 — have anemia. Parents usually do not know what is wrong; their kids are often listless, and prone to illness. By school age the immediate effects tend to fade, but long-term, early childhood anemia impairs physical and cognitive development, can lead to a weakened immune system and is sometimes fatal. The damage done in the first thousand days of life to a badly malnourished child is irreversible.

Sprinkles were invented in the late 1990s by Dr. Stanley Zlotkin, a professor of pediatrics, nutritional sciences and public health at the University of Toronto, in response to a request by Unicef, The United Nations Children's Fund, to come up with an effective way to treat childhood anemia in poor countries. Until then,

the normal treatment was iron supplements delivered via a pill or syrup, which could have an unpleasant taste and uncomfortable tummy impacts on tiny bodies. Sprinkles, a specially coated, powdered form of the supplement, is simply added to the child's normal food — usually a rice or corn porridge of some type — and has none of the side effects or bad taste.

But micronutrient powders (Sprinkles is the name of the original, most common formulation) are being distributed at a national level in just a smattering of countries: Mongolia, Kyrgyzstan, Bolivia and the Dominican Republic. Bangladesh, with a population of 161 million, is using them in about half the country. In the last four years, about 50 countries have begun pilot programs to distribute Sprinkles-like micronutrient powders. But most are only just getting off the ground. Only about 13.6 million of the world's 300 million iron-deficient children have received Sprinkles (or a differently named equivalent, in some cultures), according to Zlotkin. “We have only scratched the surface,” he said. “There is a long way to go.”

The presence of anemia usually signifies a host of other micronutrient deficiencies that are more difficult to test for. Thus, micronutrient powders like Sprinkles contain not just iron, but 15 essential vitamins and minerals, including iodine, zinc and vitamin A. Children who do not receive these micronutrients in their first thousand days of life can suffer irreversible physical and cognitive development damage. The Copenhagen Consensus, a group of expert economists convened in 2008 to determine the world's most effective aid interventions, put micronutrient supplements at the top of the list. According to their estimate, the cost of providing vitamin A and zinc to 80 percent of the world's 140 million children who are lacking them would cost \$60 million per year. The benefits of this treatment would be worth more than \$1 billion. A recent study by British and Pakistani researchers in the *British Medical Journal* of 200,000 children found that vitamin A supplements could reduce the risk of death by 24 percent.

Kiddie vitamins, like Flintstones, aren't an option — these are small children, from 6 to 24 months, so pills are unwieldy — and the levels of vitamin fortification in processed foods like flour are far too low for small children. But getting people to give the micronutrient powders to their kids regularly is also a challenge.

“Compliance is a huge issue. It will take time to change people’s behavior,” said Dr. Kaosar Afsana, the director of the health program for BRAC, the mammoth Bangladesh-based NGO. More than 70 percent of children under 5 in Bangladesh are anemic. The organization started distributing the micronutrient powder only in 2010 but it is already reaching half the country, distributing a million sachets a month. They would like to be distributing 10 times that amount.

The powder comes in a small sachet the size of a sugar packet; they cost only a few cents each. Some organizations give them away free, but some of the biggest success has come from selling them, demonstrating that even very poor people are willing to spend money for their children’s health if given the opportunity, which is a key to making the micronutrient powders a lasting solution.

Unicef and the Centers for Disease Control and Prevention have run pilot projects to show national governments that Sprinkles can be effective and that there is a demand for the supplement. The latter is important because a key to keeping the costs under control is having local — or at least regional — producers, if possible. “No company would step in unless they knew there was a market for it,” said Arnold Timmer, a senior adviser in Unicef’s nutrition section.

Persuading governments to take up the project presents an array of challenges. In the case of Kyrgyzstan, for instance, government officials were concerned that the micronutrient powders might be some kind of ploy, that they were being experimented on. The C.D.C. helped coordinate a local trial project, and there was an enthusiastic response from the mothers who saw that their children became active, got sick less, and generally acted like naughty, healthy children, said Timmer.

Despite having by far the world’s highest concentration of anemia, with two out of three children under 5 affected, African countries have been slow to take up the use of Sprinkles and other iron supplements. Most international attention goes to children who are at risk of death from starvation, while the far larger numbers who suffer from chronic problems like anemia are a lower priority.

A study in Kenya illustrates how difficult getting people to use a seemingly

basic intervention like Sprinkles can be. The study, which was run by the C.D.C., looked at 60 villages, with a total population of 80,000, from 2007 to 2010. While the results of the study were strong — anemia rates dropped 27 percent and vitamin A deficiency dropped by 17 percent — getting there took a lot of work.

Sprinkles were distributed by a local organization in the Nyando district of southwestern Kenya — the Safe Water and AIDS Project (SWAP) — in which local women sell subsidized health products ranging from malaria nets to sanitary napkins in their communities. The C.D.C. added Sprinkles to the mix. But making it work was challenging. Some people tried to use them as soap. Others were put off by the packet's red color, which they associated with disease.

One vendor, Nancy Auma Omolo, from the village of Kacholo, said that people in her community were nervous that the vitamins were poison. They questioned why, if it was good for their children, the adults shouldn't take it, too. "Do you want to get rid of our children?" they asked her. But once people started seeing how it worked, and the new energy that their children suddenly had, the packets became a popular seller.

Paying attention to community sensibilities is a key to getting Sprinkles right. In one rushed distribution in a refugee camp for Somalis, many recipients refused the micronutrients both because the shiny packets resembled condoms, and the drawing of what was supposed to be a happy child on the packet looked to many like a ghost.

It is one thing to invent a great new tool, it is quite another to get people to use it. Yet in the world of public health, distribution is usually an afterthought. Much of the focus is on breakthrough drugs, silver bullet vaccines and sprawling, megabudget projects like the \$6.6 billion dollar American anti-AIDS program Pefar, which accounted for 75 percent of the Obama administration's global health budget in fiscal year 2012. All of these approaches are focused on what public health scholars call the "medicalization" of a disease: either finding new cures or giving out drugs. That is how many Americans think of public health — we need a wonder drug to solve the world's problems — but it is misleading. That's especially true since most diseases are chronic, localized and affect poor

people.

In fact, for many diseases, like anemia, the dynamics of treatment are known and the cures already exist. Most of the diseases that kill the world's children are not a result of a mysterious virus or an unknown parasite, but of poverty: no sanitation, dirty drinking water, poor transportation and a monotonous diet devoid of nutrients. With poverty comes inefficient government and a lack of basic infrastructure, which gets to the real problem of most global health interventions: how to get assistance to people in a sustainable, efficient way, and make sure it is used correctly.

This medicalization of malnutrition is part of the reason for the slow adoption of micronutrient powders, said Dominic Schofield, a director of the micronutrient program at GAIN (the Global Alliance for Improved Nutrition, a Geneva-based organization), which is a major supporter of micronutrient powders around the world and of the C.D.C.-Kenya study as well. While an emergency feeding supplement like Plumpy Nut has received a lot of attention from international donors because it immediately saves lives, micronutrients are less sexy, said Schofield. "Prevention is not as exciting to doctors, it's not something that a lot of them understand."

In the end, the real work has to be done with parents. Getting parents to give their children the micronutrients every day can be difficult, said Afsana, the BRAC director, but the success of micronutrient powders in Bangladesh has largely been because of the advocacy efforts of the mothers themselves. "We should not get frustrated or disappointed," she said. "Hope is there."

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