No More Needles

THE ISSUE
A vaccine against pertussis (whooping cough) has been available since the 1940s, so why is this highly contagious and sometimes fatal disease on the rise?

One reason is that pertussis used to be considered a childhood disease. It was believed that adults were safe, having had the disease or vaccine as a child. Not so. In Canada, the disease is especially prevalent among 18- to 25-year-olds—the most likely group to infect babies too young to immunize.

THE CHALLENGE
The persistent challenge is that it takes up to five “needles” to fully immunize an individual. That may be manageable within the developed world—although inner-city neighbourhoods in some cities, Saskatoon among them, have lower vaccination rates than certain African nations. Not enough.

“We need a vaccine that works in one shot and provides long-lasting immunity,” says Volker Gerds, associate director of research at the U of S Vaccine and Infectious Disease Organization (VIDO)-International Vaccine Centre (InterVac). “That’s what the Bill & Melinda Gates Foundation is funding us to find.”
MAKING A
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THE RESEARCH

Since children react poorly to hypodermic syringes after their first unhappy experience and since, for pertussis at least, the target area to immunize is the upper respiratory tract, Gerdts and his team are working on a single-dose inhaled vaccine.

“Newborns will wear a face mask for a few seconds and breathe in the vaccine, which will induce a response exactly where we want it,” he says. “Using this method at birth, we could eliminate infections in babies too young to receive the current vaccine.”

For Gerdts, pertussis is the test case for his greater vision—a long-lasting, single-dose vaccine at birth that protects against many infectious diseases such as tuberculosis, the highly contagious respiratory syncytial virus, and pertussis.

THE FUTURE

“Children,” he says. “The very young, the most susceptible and those who don’t get all the boosters.”

He credits the people and infrastructure at the U of S and in particular at VIDO-InterVac for having brought his vision this far.

“This is truly a team effort and I am grateful to all partners in this project. VIDO provides a world-class environment for this type of research, and I am looking forward to the opening of the International Vaccine Centre which will foster further international research collaboration,” he says, referring to Canada’s largest bio-containment level three facility which is under construction next to VIDO and will open in spring 2011.

“InterVac is urgently needed and essential for Canada and Saskatchewan to address future emerging diseases.”

For more information about VIDO-InterVac, visit: www.vido.org

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