# New Children's Vaccine Initiative Launched

A new global initiative to develop improved or new vaccines has been formally launched. The Children's Vaccine Initiative was endorsed by a broad consortium of public and private sector institutions and industries with an interest in vaccine development and production at a meeting held on 16–17 December 1991 at the World Health Organization Headquarters in Geneva. The initiative brings together the most ambitious grouping of public and private sector interests ever forged to tackle a global health issue. As noted by Dr. Hiroshi Nakajima, Director-General of WHO, "Achieving the goals of the Children's Vaccine Initiative will not only bring enormous specific benefits in improving vaccines, but will establish a process of collaboration between the public and private sectors which will have far-reaching benefits in other areas as well."

The Children's Vaccine Initiative, developed by WHO, the United Nations Children's Fund (UNICEF), the United Nations Development Program (UNDP), the World Bank, and the Rockefeller Foundation, arose out of decisions taken at the World Summit for Children held in New York in September 1990, at which national leaders called for acceleration of the application of current scientific knowledge and capabilities toward the goal of making new or better vaccines. The initiative represents a major new international goal, following on the success that has been achieved by the Expanded Program on Immunization. That program's vaccine delivery effort met its 1990 target of immunizing 80% of the world's children against six major childhood diseases: poliomyelitis, measles, tuberculosis, diphtheria, pertussis, and tetanus. However, a daunting list of other viral, bacterial, and parasitic diseases cause mortality in children, including rotavirus infection, hepatitis A and E, dengue, Japanese encephalitis, acute respiratory diseases, meningococcal meningitis, diarrheal diseases, pneumococcal pneumonia, and malaria. Such diseases are responsible for a billion cases of illness among the world's children each year and place an enormous social and economic burden on developing countries. One goal of the Children's Vaccine Initiative is to develop vaccines against a wider spectrum of diseases in order to significantly reduce child mortality. Substantial progress is being made toward vaccines against dengue, hepatitis A, and respiratory syncytial viruses.

Industry has a key role to play in this effort through investing in research and the development and production of new vaccines. Although large multinational companies are the major suppliers of vaccines for the global immunization program currently under way, the magnitude of the financial resources required to develop more types of vaccines and the risk and uncertainty associated with marketing them in developing countries represent hurdles to private sector involvement. Thus, a new set of partnerships, combining public and private interests, is required to accelerate the process of vaccine development.

Another purpose of the initiative is to produce improved vaccines. Research is under way to develop vaccine technology that would reduce the need for multiple doses, thus eliminating a series of painful, expensive, and time-consuming vis-

*Source*: World Health Organization; Press Release WHO/62, 16 December 1991, and Press Release WHO/63, 17 December 1991; Geneva.

its to the doctor. Among the approaches being pursued are the following:

- microencapsulation, in which injectable biodegradable "microcapsules" slowly release antigen in a way that mimics repeated injections (the first animal tests of this approach were begun in 1991); and
- live vaccine carriers, in which a live viral or bacterial vaccine serves as a carrier for a second vaccine when the genes that code for the protective component of the second vaccine are inserted into the genome of the currently available one.

The immediate goals of the Children's Vaccine Initiative are to develop a single-dose tetanus vaccine to improve coverage and eliminate neonatal tetanus; an improved measles vaccine suitable for administration early in life; and a thermostable oral poliovirus vaccine that will not need the "cold chain" now required to keep the current fragile vaccines effective during transport. At the meeting, Rotary International, as part of its PolioPlus Program, presented a US$250,000 grant to WHO to help underwrite a two-year collaborative research project to develop a thermostable poliomyelitis vaccine.

The Children's Vaccine Initiative will also facilitate improvement of the quality of vaccines produced in developing countries and, together with the Expanded Program on Immunization, will ensure that vaccines are utilized effectively and efficiently in order to reach all children.

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# Two Research Projects Seek to Improve Immunization Practices

PAHO is collaborating in two research projects directed toward improving immunization practices. The projects, both in their initial stages, focus on two diseases targeted for eradication/elimination, poliomyelitis and neonatal tetanus, and will be carried out in Cuba and Bolivia, respectively.

The study in Cuba will determine the seroprevalence of polio neutralizing antibodies (types 1, 2, and 3) in children under five years of age. All children in Cuba under five receive two doses of oral polio vaccine (OPV) each year, administered in February and April by national mass campaigns. Thus, children under one year old to four years of age will have received none (if born after the April campaign), two, four, six, or eight doses of OPV, allowing researchers to estimate seroconversion rates of polio neutralizing antibodies for each number of doses.

The study has important ramifications for the global effort to eradicate polio. Little is known about seroconversion rates of polio neutralizing antibodies to greater than five doses of OPV. However, it is believed that administration of three to four doses of OPV by routine services may not be adequate to eradicate polio globally. The results of this study may help refine vaccine delivery strategies worldwide.

In addition to financial support, PAHO and WHO, through the Expanded Program on Immunization, will provide such materials as standardized international sera, standardized controls, cell cultures,