## The Global Vaccine Action Plan: a Framework for Health Improvement

### based on WHO reference material and publications



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### **History of vaccination**

Vaccination is perhaps the one public health measure that had a significant impact on human health, mortality and morbidity in modern time.

However, although vaccination may seem a "modern medicine miracle", it has actually been practiced since ancient times. The history of vaccination has witnessed important landmarks, starting with Thucydides, the Greek philosopher, who noticed in 429 BC that people who survive smallpox do not get reinfected . Buddhist monks drank snake venom to confer immunity to snake bite. In 900 AD the Chinese discovered "variolation", a primitive form of vaccination whereby healthy people were exposed to tissue from the scabs caused by the disease. Variolation spread around the world in the 1700's. It was not until 1796, that Vaccination in its modern form was formally recognized, when Edward Jenner proved to the scientific community that it worked. Six years later, the first Institute for vaccination, the Royal Jennerian Institute, was founded. In1880s Louis Pasteur discovered the vaccine against rabies; with this discovery, the first blocks of Immunology science were established. In 1890 Emil von Behring discovered the basis of diphtheria and tetanus vaccines; the same year, the Japanese physician and bacteriologist

Shibasaburo Kitasato discovered the antitoxins of diphteria and tetanus. In the 1920s, Vaccines for smallpox, diphtheria, tetanus, whooping cough and tuberculosis became widely available. In 1955, Polio vaccination began at global level, followed by a list of additional vaccines including; measles, mumps, rubella, meningitis, and more recently for hepatitis A and B, pneumococcus, varicella, rotavirus, typhoid fever, cholera, influenza, human papilloma virus. In 1980, Smallpox became the first infectious disease to be eradicated from the world.

The past two decades, the science of vaccinology has rapidly developed with the application of advances in immunology, microbiology and genomics. Nowadays, molecular genetics sets the scene for the development of new vaccine delivery systems (e.g. DNA vaccines, viral vectors, plant vaccines and topical formulations), new adjuvants, the development of more effective tuberculosis vaccines, and vaccines against cytomegalovirus (CMV), herpes simplex virus (HSV), respiratory syncytial virus (RSV), staphylococcal disease, streptococcal disease, pandemic influenza, shigella, HIV, malaria and schistosomiasis among others. Accelerated research is ongoing regarding therapeutic vaccines for cancer, allergies, autoimmune diseases and addictions.

### The WHO role in global vaccination

WHO had led the global campaign for smallpox eradication, and has always been heavily involved in global vaccination policies and interventions. Currently it is leading global polio eradication and preparing for global measles elimination

The current Global Vaccine Action Plan (GVAP) endorsed by the 194 Member States of the World Health Assembly in May 2012 — is a framework to prevent millions of deaths by 2020 through more equitable access to existing vaccines for people in all communities.

GVAP aims to strengthen routine immunization to meet vaccination coverage targets; accelerate control of vaccine-preventable diseases with polio eradication as the first milestone; introduce new and improved vaccines and spur research and development for the next generation of vaccines and technologies

In 2012, all 194 Members States at the world Health assembly at WHO agreed to the goals of the Global Vaccine Action Plan (GVAP) (2012-2020). These goals give focus and urgency to the Decade of Vaccines and reiterate on the facts that strong immunization programs prevent disease, facilitate compliance with international health regulations, contribute to the control of anti-microbial resistance, prevent outbreaks and provide an avenue for outbreak response; and contribute to sustainable development.

| GVAP-GOALS  | Indicators  |
|---|---|
| 1. Achieve a world free of poliomyelitis  | 1.1 Interrupt wild poliov<br>1.2 Certification of polio<br>2.1 Neonatal tetanus elin  |
| 2. Meet global and regional elimination targets   | <ul> <li>2.2 Measles elimination</li> <li>2.3 Rubella/Congenital r</li> <li>3.1 By 2015, reach 90%</li> <li>administrative unit with</li> </ul> |
| 3. Meet vaccination coverage  | vaccines  |
| targets in every region, country and<br>community                                       | 3.2 By 2020, reach 90%<br>administrative unit for al<br>4.1 Licensure and launch  |
| 4. Develop and introduce new and<br>improved vaccines and technologies                  | Note: this indicator is ind<br>4.2 Licensure and launch<br>Note: this indicator is ind  |
| 5. Exceed the Millennium  | 4.3 Number of low-incom   |
| Development Goal 4 target for<br>reducing child mortality and<br>integration indicators | new or underutilized vac<br>Note: this indicator is ind<br>5.1 Reduce under-five m<br>5.2 Integration of health                                 |
| The GVAP has 6 strategic objective<br>1. Ensuring country ownership of ir               | s defined as follows:   |

- 2. Demand for immunization
- 3. The benefits of immunization are equitably extended to all people
- 4. Strong immunization systems are an integral part of a well-functioning health system

### General WHO position on vaccines

- Vaccines for large-scale public health interventions should: • meet the quality requirements as defined in the current
- WHO policy statement on vaccine quality;3be safe and have a significant impact against the actual disease in all target populations;
- if intended for infants or young children, be easily adapted to the schedules and timing of national childhood immunization programs;
- not interfere significantly with the immune response to other vaccines given simultaneously;
- be formulated to meet common technical limitations, e.g. in terms of refrigeration and storage capacity;
- be appropriately priced for different markets.

### In total, six global goals were defined as follows:

- virus transmission globally omyelitis eradication nination
- rubella syndrome (CRS) elimination
- national coverage and 80% in every district or equivalent
- three doses of diphtheria-tetanus-pertussis-containing (DTP)
- national coverage and 80% in every district or equivalent
- Il vaccines in national programmes, unless otherwise recommended n of vaccine or vaccines against one or more major currently non-
- ases
- cluded in the "Research and development" section
- n of at least one platform delivery technology
- cluded in the "Research and development" section
- me and middle-income countries that have introduced one or more coines
- cluded in the "Immunization coverage" section nortality rate
- care interventions and immunization activities
- 5. Stock out and access to sustained supply of vaccines of assured quality
- 6. Country, regional and global research and development innovations maximize the benefits of immunization

In Lebanon, the MOPH/ EPI program, with the support of the WHO, has recently updated its National EPI strategy



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(2015-2020), in harmony with the GVAP. The main areas of focus of the EPI strategy include:

### 1/ universal strategic directions

- Promoting integrated, child-centered Strategy A model of primary healthcare

Strategy B - Reliance on public/consumer support to trigger desired changes in the healthcare market

- Rapidly increase immunity to selected Strategy C VPDs in order to accelerate Reduction of morbidity and mortality from VPDs

#### 2/immunization specific strategies:

Strategy D - Institutional strengthening

Strategy E - Program management support

Strategy F - Focus on quality (vs. scale) in rolling out immunization services

Strategy G - Advancing public-private partnership for immunization

Strategy H - Widening the opportunity window

Strategy I - Development of a child centered health information system on based on modern ITC platforms and solutions





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