

Triumph of Life

Iran's decades of child vaccination pay off



Social Desk

Vaccination, recognized as the most effective health intervention for improving children's well-being, has been implemented on a large scale in Iran starting from 1984. The initiative involved training healthcare managers at various levels and strengthening the cold chain system. A comprehensive immunization plan was also developed for the country, accompanied by special training courses to equip health workers with the necessary skills. These efforts resulted in the rapid expansion of safe and reliable cold chain infrastructure.

In 1984, following the victory of Iran's Islamic Revolution and alongside the establishment of healthcare networks and essential structures within the country, an immunization expansion program was launched. Its aim was to provide active immunity against vaccine-preventable diseases for children under one year old. Targeted diseases included diphtheria, tetanus (lock-jaw), pertussis (whooping cough), measles, polio, and tuberculosis.

In 1993, the hepatitis B vaccination program was integrated into this expansive immunization effort. Since 2013, standalone measles vaccines have been replaced by triple measles-mumps-rubella (MMR) vaccines. Addition-

ally, the pentavalent vaccine has been introduced to include Haemophilus influenzae type B protection in child immunizations across Iran.

To further strengthen children's immune defenses against polio in high-risk provinces bordering Afghanistan and Pakistan, injection-based polio vaccines were introduced alongside oral polio drops during routine visits at four months of age. This measure aligned with global eradication goals set forth by ongoing efforts against polio.

Health officials anticipate that pneumococcal and rotavirus vaccinations will soon be incorporated into Iran's Expanded Program on Immunization (EPI). This addition is expected to represent a significant step forward in updating the national EPI program. The successful implementation of childhood vaccination programs has significantly reduced disease-related mortality rates among Iranian children over the past four decades. For instance, cases of diphtheria have become extremely rare, with minimal encounters reported by medical students or professionals during their training or careers. In the past, diphtheria epidemics were prevalent. However, according to estimates from the Ministry of Health, the under-five mortality rate in Iran decreased dramatically from

154 per thousand live births in 1978 to around 16 per thousand live births by 2016.

During the early stages of immunization development in Iran, neonatal tetanus accounted for a quarter of all infant deaths. The infant death rate stood at 21 per thousand live births, with five specific deaths attributed to neonatal tetanus. However, widespread vaccination coverage exceeding 95 percent among Iranian children and pregnant women led to a rapid decline in instances of infant tetanus. Thus, Iran eliminated it before the year 2000 – an achievement worth noting considering that without nationwide vaccination programs implemented, an estimated annual total of 7,500 infants would have succumbed to this preventable disease based on birth rates in 2016, which exceeded one and a half million individuals.

So far, the country has achieved an impressive immunization coverage rate of 95 percent. After the Islamic Revolution, significant efforts were made to develop the primary health service network. Despite some progress before the revolution with institutions like the Razi Vaccine and Serum Institute and Pasteur Institute of Iran providing vaccines, public acceptance, especially among educated families, was limited. Studies conducted after the revolution

revealed that immunization coverage for children was only at a maximum of 30 percent, with a meager 3.7 percent coverage for pregnant women against tetanus.

Since 1984, there has been a dedicated focus on strengthening childhood immunization through domestic vaccine production. The Development Program for Immunization (EPI) was launched in 1985 as a crucial component of primary health services activities. This program involved developing healthcare centers and homes in rural areas and training necessary healthcare personnel, particularly individuals from local communities who served as health workers. Additionally, collaboration between the Ministry of Health and medical faculties facilitated training opportunities for doctors and specialized healthcare professionals.

Ensuring access to remote rural areas required equipping the health system with cold chain equipment and vehicles capable of effectively transporting vaccines. As a result of these combined efforts, immunization coverage for children under one year surpassed 90 percent by 1990 and an impressive 95 percent by 1993.

Currently, all children across the country receive vaccinations against diseases such as diphtheria, pertussis (whooping cough), tetanus, polio, measles, rubella, mumps, tuberculosis, hepatitis B, and Haemophilus influenzae type B. Health officials emphasize that preventive measures have led to the elimination or control of diseases like measles, congenital rubella, and infantile tetanus. Polio cases have been eradicated within Iran's borders for over two decades. Diphtheria, pertussis, and mumps are also under control. The Ministry currently focuses on controlling hepatitis B, primarily through vaccination, and supplies enough vaccines to meet the demand; qualified individuals can receive this vaccine. With regard to polio, the situation has significantly improved through vac-

ination efforts. Prior to widespread immunization, Iran experienced over a thousand cases of polio annually. Health officials attribute the country's current polio-free status to maintaining a vaccination coverage rate above 95 percent and conducting periodic supplementary vaccination campaigns. However, certain regions near Afghanistan and Pakistan still carry a higher risk of reintroducing the disease. That is why supplementary vaccinations are ongoing in these areas. To ensure the worldwide eradication of polio, the World Health Organization (WHO) has implemented a specialized care system with specific indicators that are monitored in all countries. The Ministry of Health has announced that Iran consistently meets these indicators, resulting in an annual update on and the approval of Iran's polio eradication document by WHO technical committees.

Before the introduction of vaccination, Iran experienced between 150,000 and 500,000 cases of measles annually. Measles vaccination began in Iran in 1967. The goal of the Eastern Mediterranean region is to eliminate measles by 2020 and halt its circulation within the regional countries.

In pursuit of eliminating measles and rubella, Iran has executed the world's largest supplementary immunization operation for these diseases since 2004. As part of current immunization efforts, administering the measles-mumps-rubella vaccine replaced solely administering the measles vaccine.

Continuous improvements in healthcare systems have facilitated swift identification and response to suspected measles cases. Additional vaccinations for both measles and rubella are administered depending on circumstances, especially in high-risk areas, to effectively combat these illnesses. Iran's Ministry of Health defines elimination as zero endemic cases with no circulating endemic virus for at least 12 months while

maintaining a standard care system. Confirmation is granted after this status continues uninterrupted for at least 36 months or more.

Currently, Iran is among the first regional countries to submit a national document outlining its progress toward eliminating measles, which is to be reviewed and approved by WHO – a remarkable achievement resulting from over three decades of dedicated work from health workers, ranging from those working throughout rural areas to headquarters levels within the healthcare system. Continuous efforts remain crucial due to disease transmission risk from neighboring countries.

These achievements would not have been possible without the unwavering commitment and support from senior policymakers alongside an extensive network of healthcare services covering over 95 percent of rural areas nationwide. Additionally, establishing suitable cold chains ensuring vaccine quality – from central storage facilities to inoculation sites in urban and rural centers – and making refrigerated vehicles available for transportation have been instrumental. Iran's strong scientific capabilities including vaccine production and active participation from families in vaccinating their children have significantly contributed to these accomplishments and improved overall health indicators.

Childhood immunization is an investment that saves millions of lives worldwide each year. Despite Iran's successes in controlling and eliminating numerous vaccine-preventable diseases, international reports indicate that a significant number of children still die annually due to preventable illnesses such as whooping cough, measles, infant tetanus, Haemophilus influenzae, viral diarrhea, hepatitis B, and pneumonia. Health experts emphasize that these deaths could easily be prevented through vaccination efforts.

NEWS IN BRIEF

Low income groups to be treated for free: Minister

All inpatient and outpatient services will be provided free of charge in government health centers and hospitals for the three lowest income groups in society, announced the Minister of Health, Treatment, and Medical Education.

Bahram Einollahi also stated that previously, the five lowest income groups were covered by free insurance, according to IRNA.

Moving forward, the first three income groups will have access to both free insurance and complimentary inpatient and outpatient services at medical centers and government hospitals.

He further mentioned that the government will cover 100 percent of the insurance premium for individuals within these income groups.

Einollahi emphasized that population rejuvenation is a top priority for the Ministry of Health. As Iran faces potential challenges related to an aging population in the future, measures are being taken to promote rejuvenation of the population. Special facilities for childbearing have been designated specifically for married students studying medical sciences.

Caspian seal found dead on Caspian Sea coast



A deceased Caspian seal was discovered on the beach of Juybar city in Mazandaran Province.

The local department of the environment unit dispatched officials to investigate the cause of death for this marine animal, IRNA reported.

The Caspian seal is a rare species of marine mammal that exclusively inhabits the Caspian Sea, as well as rivers such as Volga and Ural in Russia. This particular species requires international support due to factors like overfishing, unfavorable living conditions, and a significant decline in population.

Typically found in the southern waters of the Caspian Sea, including Iran during summer, spring, and autumn seasons, these seals migrate towards icy regions in the northern parts of the sea to give birth.

