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India looks at immunization as best savior!

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Vaccines on government's top agenda

Complete immunization remains high on the agenda of the union health minister, Dr Harsh Vardhan as he points out the fact that lakhs of young children die of preventable diseases every year in India. The Minister is right when he rues that even 29 years after the launch of the immunisation program, only 65-70 percent of the children get immunized. "One important aspect of meeting healthcare challenges is to focus on preventive and positive healthcare, in which immunization plays a big role," Dr Vardhan said at an event in Delhi, adding further, "I believe we can achieve anything if we put our heart into it. The eradication of polio from India, once considered an impossible task, is an excellent example. There is goodness in every person's heart. We need to leverage that and make every Indian a stakeholder in good health. I assure you that the government is very serious about achieving total immunization in India, and whatever it takes, we are determined to achieve this goal."

The recent introduction of four new vaccines in the universal immunization programme (UIP) is being labelled as major accomplishment. The inclusion of injectable polio vaccine (IPV) is expected to aid in complete elimination and achieving the zero virus targets, not possible earlier in case of oral polio vaccine due to the live nature of virus. Similarly, the new Rubella vaccine with high efficacy will not only control Rubella but Measles as well. Hence, it is the elimination of two diseases at no extra cost. While the Japanese Encephalitis was already existing in immunization program but now coverage is being extended to adults due to increased number of cases being reported. Rotavirus vaccine is considered to be a major achievement to contain diarrhoea although experts lay onus also on sanitation and better hygiene too. It is said that estimated 50,000 deaths could be averted just by rolling rotavirus immunization.

As per India Infrastructure Report 2013-14, currently only 11 percent of the vaccines in India are a part of the UIP while 65 percent constitute the non-UIP vaccines. Rabies vaccine and sera/globulins account for 12 and 10 percent respectively. Hence, there exist a lot many opportunities for the companies to collaborate with the government agencies to produce affordable yet profitable vaccines.

DBT at the forefront

"Over a period of time, the vaccine industry in India has grown enormously, with international experience and has set up state of art vaccine manufacturing units with WHO pre-qualified standards and supplying vaccines to various countries in the world," said Dr TS Rao, senior advisor, Department of Biotechnology (DBT).

The department has implemented a program to develop vaccines through a National Jai Vigyan Mission Program on Science and Technology for generation of new and improved vaccines since 1988-89. Several vaccine candidates are in pipeline and some of them have entered into pre-clinical and clinical trial stages. Many of them are being developed with rota model such as dengue, malaria and tuberculosis. Added Dr Rao, "It is a well-known that the time taken from discovery to delivery of new vaccines can take more than a decade. During this developmental process several constraints need to be met towards scientific, technical and regulatory hurdles before these will be put into regular immunization program. DBT has initiated Vaccine Grand Challenge Program, implemented since 2009-10, with an aim to develop affordable, effective vaccines, adjuvants and vaccine delivery technology and to facilitate clinical development consistent with highest ethical and regulatory standards."

Dr MK Bhan, former secretary, DBT felt that in terms of fulfilling the requirements of poor, the vaccine industry has done outstanding job. "In 2012-13, 7-8 vaccines have been commercialized. It has brought relief to sufferers. Earlier it used to be pharma but now Indian vaccine industry is being admired," he told BioSpectrum in an interaction few months back.

Target specific populations for better outcomes

The National Family Health Survey 2005-06 has revealed huge gap in immunization coverage in between urban and rural areas. An analysis of the immunization coverage in 2005-06 also brought forth the rampant inequalities based on gender, regions and socio-economic groups of people. Whereas less than 40 percent of all children in rural areas were immunised, the urban coverage was 58 percent.

A study spearheaded by the Public Health Foundation of India (PHFI) has concluded that improving immunization coverage and the introduction of a rotavirus vaccine significantly alleviates disease and financial burden in Indian households. As per report, India has the highest under-five death toll globally, approximately 20 percent of which is attributed to vaccine-preventable diseases. It also points to the fact that the population subgroups or regions with low existing immunization coverage benefit the most from the intervention. Therefore, the authors of the study report of 'Analysis of Universal Immunization Program and introduction of rotavirus vaccine in India with Indiasim' have suggested that increasing coverage by targeting those subgroups alleviates the burden more than simply increasing coverage in the population at large.

As per Dr Ramanan Laxminarayan, vice president-policy and research, PHFI, the major highlight of the study is that the hospitalization could be averted and impact of rotavirus vaccine will be ainly on preventing deaths and saving medical costs." "However, the limitations remain with system challenges, cost, and health improvement," he added quickly.

Scaling up immunization by targeting regions with low coverage averts a slightly higher number of deaths and expenditure.
Vaccines have an edge over drugs?
"Prevention is better than cure", is the message that has been handed over to us since generations. The need for drugs comes when there is a failure of body system due to breakdown of immune system. Hence, the vaccination as an attempt to prevent that failure surely is a huge boost to a great extent.
Agreeing with the fact, Dr Davinder S Gill, CEO, Hilleman Laboratories felt that life style diseases too might be prevented but should not be a priority right now. Instead he believes that the vaccines are more required for the children. "Rightly so, the government has identified the need to create healthy generation of children by vaccinating on time. Of course, drugs are going to be important but government has recognized the importance of vaccines for the elimination of need to take drugs at a later stage, thereby lowering the disease burden," said Dr Gill.

According to Dr Jacob John, senior professor, Christian Medical College, Vellore, "There are two avenues to build on success and one is to target more diseases such as measles and rubella as they fulfill criteria after polio. The second is to build upon our health management system so as to control many neglected diseases such as TB, malaria, typhoid fever or those that have failed to come under control. Some like pneumococcal diseases and rotavirus diarrhoeas are vaccine-preventable. We have to learn to use these vaccines in the national immunisation program."

Farsighted policy on vaccines

Lot many experts believe that there is a need for proper identification of vaccine requirements against specific diseases of priority. Doing own studies rather than only relying on foreign agencies also creates heartburns among those who oppose the mere populist measures. The policymakers have to keep open to ideas and that the polices must be updated on regular basis. There is an urgent need for active surveillance of the effects of the vaccine, which is currently lacking. The combination vaccines should not act as a back door entry for vaccines that we don't actually need. Now, the next big focus of the government is to introduce the IPV and pentavalent vaccines.

Here the critical comments from an expert like Dr Jacob John sums up everything. He said, "When it came to polio, giving 3 doses for primary immunisation was the rule (was it policy?) but when science found that 3 was grossly inadequate and proposed 5 doses in first year, or pulse method to rapidly control polio, or to use IPV -- all in the early 1980, none of these was accepted -- here policy was in direct contradiction to science and until that gap was filled in the mid-2000s, we could not eliminate polio. Policy makers do not keep abreast of science."

Prof NK Ganguly, former director general, Indian Council of Medical Research, said, "For a successful rollout of IPV in the country, the government needs to build capacity and ensure sufficient stocks and logistics. The availability of the vaccine would be a critical factor. We also need to build advocacy among the people and have trained manpower ready from the primary immunization field to administer the injections."

Out of all the states and Union Territories, eight have already introduced pentavalent vaccines, 11 more will do by October this year and the remainder 17 will do so by April next year. The National Rural Health Mission has to play greater role in the states such as UP, Bihar, Madhya Pradesh, and Rajasthan that account for most of the deaths.