

## **Immunization Program in India— Needed a Revamp!**

Immunization is probably one of the most cost-effective interventions to reduce burden of childhood morbidity and mortality, provided used optimally and judiciously. Currently, it is estimated that immunization saves the lives of 3 million children a year but 2 million more lives could be saved by existing vaccines. It has the potential to drastically improve public health outpacing the reforms needed to achieve similar goals through socio-economic development and other preventive measures like safe drinking water and improved sanitation. Current scenario of Immunization Program in India needs an overhaul to achieve the desired goals.

There are many lacunae in the Immunization Programme in India; some of them are enumerated below:

*Lack of an effective disease surveillance system:* Apart from AFP-surveillance for poliomyelitis cases, there is hardly any disease surveillance system worth the name in the country to rely upon for authentic data on any infectious disease. Most of the available data on infectious diseases is the product of estimation and mere guesswork based on sporadically published studies. In the absence of an effective surveillance, we are not able to identify and quantify the priority diseases needing urgent attention. This situation is true for almost all infections including many vaccine-preventable diseases in the country. There is paucity of data on sero-prevalence of many vaccine preventable diseases against whom new vaccine products are available in the market, for example: pneumococcal and rotavirus infections. In the absence of recent multi-centric studies, the sparse data available so far are likely to be manipulated by vaccine-manufacturers to push their products in the market.

*Flawed approach:* The current approach of the health sector is 'vaccine oriented', rather than

'disease oriented'. Take the instance of measles, mumps, and rubella. Our strategy so far is to improve coverage and usage of the vaccine instead of designing a separate strategy to combat individual diseases.

*Unavailability of effective vaccines:* For some of the most important infectious diseases causing highest annual death toll like dengue, malaria, RSV, diarrheal disease causing bacteria, *etc.* effective vaccines are not available. On the other hand, the cost of many new effective vaccines needed most for our country is quite unaffordable, *e.g.*, HPV, Rotavirus, IPV, Hepatitis-A and Chickenpox vaccines are priced too exorbitantly to be affordable for use in our country on a mass level.

*Poor routine immunization (RI) coverage:* To further compound the problem, the vaccination coverage of routine EPI vaccines is still quite dismal. According to recent NFHS-3 data, only a quarter of the 12-23 months old children are fully immunized with BCG, measles, and 3 doses each of polio/DPT in UP while in Bihar only one-third have received these antigens. Such a low rate in two most populous provinces of the country will further compromise the effectiveness of these vaccines.

*Faulty planning and poor implementation of national vaccination policy:* Right now, we do not have an independent vaccination strategy based on our own requirements and needs. Our vaccination programs are managed and controlled by inter-national agencies with very little inputs from local experts and local academic bodies. There has been little effort to utilize the available scientific data from Indian studies. There is no national agency responsible for generation and analysis of local epidemiological data on infectious diseases. No central agency to devise, plan and implement a vaccination policy based on indigenous needs. National Technical Advisory Group on Immunization (NTAGI), the highest technical body has failed to serve its purpose. It has even failed to apprise the donor international agencies and organizations of the pressing needs of this sector in the country.

## Reforms Needed to Reorganize Immunization Program

*Need of an independent central body:* There is an urgent need to establish a separate department such as "National Foundation of Infectious Diseases and Vaccines" directly under the aegis of Ministry of Health and Family Welfare (MOHFW) responsible and accountable for infectious disease surveillance, planning and implementation of vaccination policies and strategies. We have example of Center for Disease Control (CDC) in USA and countries like China has started their own CDC. The foundation should be assigned the task of conducting multi-centric trials in collaboration with ICMR, academic bodies, and institutions like NIV, Pune and CRI, Kasauli to unearth critical data on important infectious diseases. This institution should encourage, help and support local R&D of common vaccine candidates in the country.

*Investment in research and development of indigenous vaccines:* Continuous research in the field of vaccinology is of paramount importance, particularly, if we wish to have our own policy and strategy regarding immunization based on our own priorities and needs. We need to tackle our problems with independent implementation at national level without being over dependent on international funding and support. Unfortunately, this is the most neglected area. The industrialized nations and their vaccine manufacturers may not be interested in developing the products, not of much use in their own countries and regions. This is precisely the reason why vaccines needed most for the third world countries are often dubbed as 'orphaned vaccines'.

Government of India must encourage indigenous production of vaccines by any company and, in particular, by Indian companies. They must be given incentives in form of tax concessions, soft loans, flexible licensing policy, *etc.* to survive in competitive global vaccine market. The local vaccine manufacturers and manufacturing units should be given added incentives to not only perform research in the field of vaccinology but to develop and introduce new antigens depending upon the local need.

*Need to develop an efficient AEFI system:* Currently,

there is absolutely no national level AEFI (Adverse Events Following Immunization) reporting system. Only sporadic reports in media and few post-marketing surveys conducted by drug companies are brought to the notice of Health Ministry. There is an urgent need to establish a robust AEFI reporting system in the country. Vaccine manufacturers, IAP and other professional bodies, medical practitioners, NGOs and health agencies can contribute handsomely in this regard. Innovative avenues such as collection of data through e-mail or directly on websites can help in generation of pooled data.

*Introduction of new vaccines at affordable prices:* Many new vaccines that are needed urgently are either quite expensive or not available in enough quantity. Here the role of international agencies like GAVI and Gates Foundation becomes critical. Even vaccine manufacturers can facilitate introduction of these new antigens by stepping up the production and taking certain austerity measures like curbing expenditure on promotion of the product. These measures may not only bring down the cost but also make the product available in requisite quantity.

*Converting vaccination drive into a mass movement:* No community based key intervention can be successful until it is made popular amongst the masses through proper IEC and advocacy. Success of ongoing polio eradication program in almost all parts of the country is an ample proof of efficacy of this modality. The poor RI coverage in key states is enough reason to take initiatives to boost RI on a war footing basis.

*Focus on school-age and adolescent immunization:* To help in catch-up immunization and to augment sero-protection at a later age, vaccination of the adolescents should be taken on a mass level. Services of school children can be obtained in popularizing immunization programs in the country.

### Role of IAP

IAP with its vast network of members can help in conducting meaningful research in the field of disease prevalence and AEFI. The need of the hour is to seek IAP advice more frequently on many issues pertaining with pediatric vaccination. Onus is now on to Government of India to not only seek increased participation of the Academy but its

recommendations should also be valued and implemented wherever deemed fit.

IAP has launched a Program of "Science of Vaccinology" under IAP Vision 2007 to create a network of more than 50 national and regional immunization resource persons and more than 600 district immunization resource persons all over the country with specific responsibilities that include collaboration with government and non-government

organizations to improve RI, to help nodal health personnel in developing AEFI system, and creating awareness about vaccination in the society.

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