EDITORIAL

Immunization Agenda 2030: Reaching the Unreached is the topmost priority

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Vaccines save lives. As a safe and cost-effective public health intervention, vaccines have contributed greatly to lessen the burden of infectious diseases in both developing and developed countries. According to a recent estimate (CDC 2023) 4 million deaths are prevented by childhood vaccination every year[1].

Expanded Programme on Immunisation was launched in 1974 with initial focus on six childhood vaccine-preventable disease. After that over the years newer vaccines for infants and children, including vaccines for protection of older children, adolescents and adults were introduced in national immunisation schedules to increase the breadth of protection against infectious diseases. Over the decades coverages of vaccines have improved globally and immunization has attained one of the highest coverage levels among the preventive health interventions throughout the world. Since 2010 almost 86% of children globally are receiving recommended three doses of diphtheria-tetanus-pertussis–containing vaccine before their first birthday. Estimated global coverage of two doses of measles congaing vaccine during 2018 reached to 69% which was only 42% in 2010[2].

Though global and national averages of vaccine coverages have steadily increased over the decades, benefits of immunization are unevenly shared and inequities in coverages vary widely among and within countries. During 2019 an estimated 95% of children living in high-income countries were vaccinated with DTP-3 compared to approximately 74% of children living in low-income countries[3].

WHO/UNICEF estimates of national immunisation coverages (published in 2021) also show that during 2019 when global DPT-3 coverage was 86%, as high as 19 million children remained either un-vaccinated (not received DPT- 1) or under- vaccinated (not received DPT-3); number such children subsequently increased during pandemic years and in 2021 there were 25 million under-immunized infants worldwide, most of whom, 18.2 million (73%) were zero-dose children. Just 10 countries accounted for 62% of zero -dose children, of which India tops the list with 2.7 million children[4].

These zero dose children, who have not received even the first dose of routinely administered basic vaccines (assessed and monitored as children not received DPT- 1), are the markers of marginalised, underprivileged or underserved communities facing multiple deprivations, about two thirds of whom are living below the international poverty line of USD 1.90 per day[5]

Expanding access to immunization is crucial to achieve the Sustainable Development Goals (SDGs). In this context reaching the zero-dose children is of utmost importance to improve and sustain immunisation status of communities. Very recently an analysis of household survey data from 92 Low and Middle-Income Countries indicated that children who receive one dose of a vaccine almost always tend to receive several other vaccines[6].

To improve immunization coverage and to address equity issues, the World Health Organization has launched the

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Immunization Agenda 2030 (IA2030), with the goal of "leaving no one behind", which includes as a core objective extension of immunization services to reach zero-dose and underimmunized children and communities. IA2030 has set ambitious targets to reduce the number of zero-dose children by 25% by 2025 and 50% by 2030 as compared to 2019 levels[7].

Indian scenario

India is implementing the largest immunization program in the world, catering to 26 million children and 29 million pregnant women, through more than 12 million immunization sessions across the country every year[8]. Launched as Expanded Programme on Immunization in 1978 and subsequently modified and renamed as Universal Immunisation Programme (UIP) in 1985, the programme is currently providing vaccines, free of cost, against 12 Vaccine Preventable Diseases (VPDs). Lot of VPD-related deaths and disabilities have been averted and very significantly India has achieved elimination of polio in 2014 and elimination of maternal and neonatal tetanus in 2015.

Over the years there has been a continuous improvement of immunisation status of children throughout the country. Proportion of fully immunised children (FIC) by one year has steadily increased from 35.4% in 1992-93 (NFHS 1)[9] to 43.5 % in 2005-2006 (NFHS-3)[10] and reached 76.4% in 2019-21 (NFHS -5)[11]. But, the pace of increase in FIC percentages in urban areas is slower in comparison to increase of FIC in rural areas, especially during the period from NFHS 3 to NFHS 5[11] (17.9% vs 38.0%). A careful scrutiny of all the five national family health surveys (Table-1) reveals that from NFHS 1[9] to NFHS 4[12] percentages of FIC in urban areas were more than that of rural areas. But, according to latest NFHS, for the first time in India fully immunized children percentage in urban areas is less than that of rural areas[9-13].

India is rapidly urbanising, but till now urban health care delivery system is not adequately equipped to cater preventive health services to urban populations, specially to urban poor. Within urban areas, coverages of preventive health care interventions, like immunisation, are less among poor/ marginalised population in comparison to general people. According to NFHS 4, almost 36% of urban children missed full immunization; which was as high as 58% amongst the urban poor[12]. Urban poor and marginalised population groups, migrant labourers etc. living in slums (registered/unregistered), jhupries, temporary construction sites, on pavements etc. mostly remain "ghettoized" and "spaced out" because of the inadequacy in urban public health delivery system to reach them with services. Lack of economic resources and health insurance inhibits their access to the available private facilities[14].

TABLE-1: TRENDS OF FULLY IMMUNIZED CHILDREN AND ZERO DOSE CHILDREN IN ACCORDING TO RESIDENCE, INDIA[9-13, 15,16]

	Fully Immunised Children (12-23 months)			**Zero Dose Children** (12-23 months)		
	Total	**Urban**	**Rural**	**Total**	**Urban**	**Rural**
NFHS 1 (1992-93)	35.4%	50.7%	30.9%	33.4%	19.4%	37.5%
NFHS 2 (1998-99)	42.0%	61.0%	37.0%	26.4%	12.5%	30.5%
NFHS 3 (2005-06)	43.5%	57.6%	38.6%	23.9%	15.4%	26.8%
NFHS 4 (2015-16)	62.0%	63.9%	61.3%	10.1%	9.3%	10.4%
NFHS 5 (2019-21)	76.4%	75.5%	76.8%	6.4%	7.5%	5.9%

Despite substantial progress in immunisation coverages, India is far of reaching its UIP goal of at least 85% children to be fully immunised by one year and children and communities continue to be beyond the reach of immunization services. UNICEF estimates that before the pandemic, the number of zero-dose children in India stood at around 1.3 million. In 2021, the figure alarmingly rose to 2.7 million[17].

According to latest Family Health Survey overall prevalence of Zero Dose Children (ZD) in the country is 6.4%.[16] The prevalence varies widely among states, ranging from 17.8% in Meghalaya to only 2% in Himachal Pradesh. North Eastern states continue to have the highest ZD prevalence in the country. Out of 680 districts for which data is available in NFHS 5, 145 (21%) have a ZD prevalence more than 10% and 42 districts have prevalence of 15% or more. Contrary to expectation prevalence is more in urban areas[16]. At the subdistrict level these children are strongly concentrated among the

most disadvantaged population groups, among households in the bottom wealth quintile, mothers in lowest educational category, scheduled tribes, muslim families, women with incomplete antenatal care, birth order of 6 or more and women giving birth outside a health facility. [15,16]

Overall prevalence of ZD children of India apparently seems not to be high enough to warrant big threats of VPD outbreaks in the country. But, as mentioned above these children are from underprivileged families and communities who are largely invisible to health systems and go without routine vaccines every year. Such pockets of vaccination blind-spots leave millions of children vulnerable to vaccine-preventable diseases. As 'no one is safe until everyone is safe' - reaching these families remain one of the hardest challenges to the existing vaccination programmes all over the world.

Government of India has taken a number of initiatives to strengthen routine immunization coverages in the country. A special vaccination drive in the name of *Mission Indradhanush* was launched in 2014 to identify and vaccinate unvaccinated and partially vaccinated children spread across the country[18]. These efforts resulted in India achieving highest ever DTP-3 coverage of 91% in 2019.[18] Prevalence of zero Dose children dropped down sharply from 23.9% in 2005-06 to 6.4%.[16]

Effect of pandemic and after:

COVID-19 pandemic has adversely impacted routine immunization all over the world with over 50 million children and adolescent girls missing out on life-saving vaccines since 2020. Large number of measles outbreaks occurred in 2022, highlighting the urgency to identify and vaccinate these children to avert looming threat of large disruptive VPD outbreaks.

WHO Strategic Advisory Group of Experts on Immunization in March 2023 proposed a 3-pronged approach to get back routine immunisation drives on track. (i) Provide catch-up vaccination to children who have missed scheduled doses; (ii) Restore coverage to at least 2019 levels; and (iii) Strengthen immunization programmes within PHC. This will need political leader-ship, advocacy and partnerships, resource mobilization, tailored country responses, responsive technical assistance, and monitoring and learning approaches.[19]

In India also the pandemic disrupted routine immunisation services demanding topmost priority to address the threats of reversal of decades of progress in child survival and child health. To catch up on gaps that might have emerged due to the pandemic, *Intensified Mission Indradhanush (IMI) 4.0* has been planned to reach out the unvaccinated and partially vaccinated children and pregnant women. In addition to the focus on high-risk areas, this IMI will also focus on areas where RI sessions were impacted due to COVID-19 pandemic and in the urban areas[18]. Hopefully IMI 4.0 will contribute effectively in filling the gaps and make lasting gains towards universal immunization.

On May 5, 2023 WHO Director-General Tedros Adhanom Ghebreyesus declared end of Covid 19 as a global health emergency. This is the time and opportunity to act with utmost urgency to catch-up millions of children who have missed vaccine doses during the pandemic, restore essential immunisation coverages to pre-pandemic levels and strengthen primary health care to deliver immunisation services.

Strengthening of routine immunisation and fulfilling the ambitious goals and targets of Immunisation Agenda 2030, our country has to accord highest level of commitment and collaboration between related sectors. To identify and vaccinate missed and inadequately vaccinated children living in underserved and hard- to- reach areas states should ensure that areas are properly demarcated among health facilities with fixed accountabilities. Comprehensive head count survey-based immunisation micro-plans to be prepared and followed by health professionals which will require capacity building of health workers and appropriate supportive supervision. Mobile and flexible timings of the sessions, strong community based educational programmes and communication interventions for demand generation, community engagement and strengthening involvement of NGOs in high-risk areas are some of the other necessities to ensure reaching the unreached.

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