

# Immunisation as a pillar of healthy living

A team of experts give their views on immunisation opportunities and threats

Immunisation is an important strategy for child survival, that can significantly reduce deaths for children who carry the largest burden of illness in developing countries.<sup>1</sup> Vaccination has been billed as the most cost-effective public health intervention, preventing vaccine-preventable diseases (VPDs), and an estimated 2-3 million deaths per year.<sup>2,3</sup> If global vaccine coverage is improved, then immunisation can avoid a further 1.5 million deaths annually.<sup>4</sup> Forty years ago, 134 national government members of the World Health Organization (WHO) joined and signed the Alma Ata Declaration.<sup>5</sup> This declaration made Primary Health Care (PHC) the official health policy of all member countries and broadened the perception of health beyond doctors and hospitals to social determinants and social justice.<sup>5</sup> The Alma Ata declaration grew into the United Nations Millennium Development Goals, including immunisation as a key element of PHC and pillar for improving the general health of populations and survival of children under five.<sup>5,6</sup>

Drivers of poor immunisation performance persist in many developing countries, including language and communication problems, poor transport, poor geographic terrain, a large mobile refugee community, low community and health worker education on immunisation, cultural/religion-related barriers, large population of poorly equipped teenage mothers, inadequate stock of vaccines, under-staffing of health workers and vaccinators in health facilities.<sup>2,7</sup>

Undoubtedly, the PHC elements play a critical role in the provision of health care in terms of promoting health, preventing and curing disease, and rehabilitation. The appropriate delivery of the elements and tenets of PHC rely on physicians, nurses, midwives, pharmacists, other allied health professionals, community- and ancillary workers, and traditional practitioners, who are suitably trained to work as a team and respond to the expressed

health needs of the community.<sup>6</sup> The major challenge has been the growing strain on resources in most countries, which are poor, and are weighed down by inadequate numbers of physicians and nurses to meet the required health needs. Clearly, this indicates the need for policy makers to consider new and creative opportunities and ways to expand and enhance the provision of PHC, making it universally accessible and affordable to individuals and families in the community, while ensuring accessibility, public participation, health promotion, with appropriate use of modern technology and intersectoral cooperation. The Alma Ata Declaration, therefore, emerged as a major milestone of the twentieth century in the field of public health and has anchored these values into the United Nations (UN) Sustainable Development Goal 3 that in part emphasises the need to use immunisation to reduce under-five mortality to less than 25 deaths per 1000 live births by 2030.<sup>4,8</sup>

The WHO defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, placing immunisation as key and central to the very definition of healthy living. Immunisation now prevents both infectious VPDs and cancers, including cervical cancer and hepatocellular carcinoma, broadening the role of vaccines into the realm of non-communicable diseases.<sup>9</sup> More recently, vaccines have been recommended for use in improving the quality of life of people living with HIV, sickle cell disease, diabetes, congenital diseases, post-organ transplants and malignancies and helping combat the problem of antibiotic resistance.<sup>9</sup> The bigger hindrance to this effort and success is vaccine resistance, refusal and hesitancy.<sup>3</sup>

## Benefits of immunisation

Globally, life expectancy at birth has improved to an all-time high of 73 years in 2019.<sup>10</sup> However, there are discrepancies in the mortality rates by regions, age patterns, trends<sup>10</sup> and causes of mortality within age groups.<sup>11</sup> The 2017 Global Burden of Disease Report indicated a huge decrease of 22.2% in deaths due to communicable diseases, maternal, neonatal and nutritional causes. Common causes of death like measles decreased by 57.0% from 222,000 in 2007, to 95,300 deaths in 2017, while deaths by all causes of diarrhoea decreased by 16.6% in the same period.<sup>11</sup> The success stories of vaccination globally span from eradication of smallpox in 1980, to near elimination of neonatal tetanus with further targets to eradicate polio, measles, rubella and mumps.<sup>10</sup> Vaccination has been attributed to the reduction of severity of all forms of tuberculosis

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(TB) infection and rotavirus-associated gastroenteritis. Globally, there has been a marked reduction in morbidity and mortality due to VPDs such as pneumonia, meningitis, influenza, gastroenteritis, measles, hepatitis, cervical cancer<sup>11</sup> among others.

The WHO, in addition to routine childhood immunisation,<sup>2</sup> now recommends tetanus (Td) booster dose for adolescents at age 9-15 years, a dose of rubella for adolescent girls and women of child bearing age if not previously vaccinated and two doses against human papillomavirus (HPV) to females of age 9-14 years; these to prevent neonatal tetanus, congenital rubella syndrome and cervical cancer respectively.<sup>4</sup> With age, immunity due to some vaccines wanes, thus vaccination against pneumococcal pneumonia, Td and varicella in adults above the age of 65 is recommended.<sup>12</sup>

Most VPDs have been associated with sequelae impacting quality of life even after recovery from an episode of infection. For example, paralysis following polio, gastroenteritis associated stunted growth, hepatitis B infection in infancy leading to chronic carriage - a precursor to liver cirrhosis and hepatocellular carcinoma later in life; and blindness and encephalitis associated with measles; while infection with high-risk HPV-types have been associated with cervical cancer in women.<sup>9,13</sup> Immunisation has been shown to reduce antibiotic resistance, a timely benefit since antibiotic resistance is now listed as a threat to global health.<sup>14</sup>

### Effect of COVID-19 on coverage

The advent of COVID-19 with strict lockdown regulations being implemented to limit the rapid spread of the virus has been an effective life-saving intervention, reducing the expected exponential increase in infections in many countries. On the other hand, the lockdowns had a negative effect on routine childhood immunisation globally. Since the start of the pandemic, more than half (53%) of the 129 countries where data was available reported moderate-to-severe disruptions, or a total suspension of vaccination services during March-April 2020.<sup>15</sup> Due to the COVID-19 pandemic, there are concerns about the resurgence of measles, reversal of gains with polio control, and delayed introduction of new vaccines. These, plus complacency, difficulty in accessing vaccines, and vaccine refusal or low confidence in vaccines are key reasons underlying vaccine hesitancy. The WHO and UNICEF warned that disruption to immunisation programmes by the COVID-19 pandemic threatens to

unwind decades of progress against VPDs like measles, and poses the risk of exchanging one deadly outbreak for another. This resulted in a call to action by the WHO for all countries to make a joint effort to deliver routine immunisations as an essential service during the pandemic, and to plan and develop a strategy to increase acceptance and demand for vaccination.<sup>15</sup>

### Vaccine hesitancy

Despite the huge successes of vaccines, vaccine hesitancy continues to increase globally with declining vaccination rates and subsequent VPD outbreaks. This led the WHO to declare vaccine hesitancy as one of the top ten threats to global public health.<sup>3</sup> Vaccine hesitancy ranges from delaying vaccination to refusing vaccination, despite the availability of vaccination services, with decision-making being influenced by factors such as complacency, convenience and lack of confidence. Vaccine hesitancy is complex and context-specific, varying across time, place and vaccines and can be expressed by anybody, including scientists, religious leaders and healthcare workers.<sup>16</sup>

Globally, the COVID-19 pandemic has fuelled vaccine hesitancy with misinformation being spread through social media, subsequently leading to mistrust, complacency and a decrease in vaccine confidence<sup>17</sup> with the anti-vaxxers having increased their social media following by at least 7.8 million people since 2019. Most damage is done through the misuse of social media, where people indiscriminately share every message they receive, without checking if it is true or false. Although many social media platforms are taking steps to remove or ban misleading content, anti-vaxxers find other ways to distribute misinformation.

### Interventions to improve uptake

No single strategy can address all of the different dimensions of vaccine hesitancy. However, caregivers consider the vaccination-related advice given to them by their own healthcare professionals (HCPs), as having the most influence over the decisions they make regarding vaccination. Therefore, it is important that HCPs use strong communication strategies to build trust, enhance vaccine confidence, combat vaccine hesitancy and increase vaccination uptake.<sup>18</sup> On the other hand, while HCPs are a significant source of trust, they are sometimes hesitant to vaccinate themselves or their families.<sup>19</sup> Hence, it is imperative that initiatives promoting healthy living and embracing immunisation as a key strategy must address vaccine hesitancy, especially among HCPs.

A cadre of HCPs with the potential to increase access to vaccination is pharmacists, who are trusted by communities and often the first point of access at PHC level. Nonetheless, there is insignificant evidence of the role of pharmacists in vaccination and their integration into vaccination programmes across low- and middle-income countries (LMICs), which is something to explore in future.<sup>20</sup> Motivational interviewing has shown promise to change health behaviour. Although motivational interviewing has not yet been widely used to address vaccine hesitancy, recent evidence has shown

promising results, especially when combined with other strategies.<sup>21</sup> A positive effect on vaccination uptake was seen with motivational interviewing implemented amongst post-partum women in Quebec.<sup>22</sup> Similarly, the use of motivational interviewing to address vaccine hesitancy, especially for HPV vaccination, is on the increase.<sup>21</sup>

COVID-19 presents a unique opportunity to develop and test innovative context-specific communication interventions that incorporate the latest behavioural change methodologies. One of these is 'storytelling' which refers to narratives of personal experiences, which are easier to understand than traditional scientific communication in pro-vaccine messages, and is a new, innovative and effective intervention against vaccine hesitancy.<sup>23</sup> Social mobilisation activities and strategies to increase uptake of vaccines should be tailored to the needs and characteristics of the target population e.g. level of literacy and education, access to healthcare services, socio-economic status, prior knowledge and culture.<sup>24</sup> Outreach programmes and catch-up campaigns are critical elements of social mobilisation, especially to reach children without access to routine immunisation services.

There is need to employ a fully array of different role players when it comes to mobilisation for vaccination.<sup>25</sup> The full capacity of government infrastructure should be utilised to establish plans and structures across government departments e.g. hospitals, clinics and schools.<sup>25</sup> Non-governmental organisations are well placed to reach communities, with good understanding of local communities and high levels of trust, to function as advocates for and networks for vaccine uptake.<sup>25</sup> Civil society, including community groups and associations e.g. religious groups, community associations, volunteers, should be used to promote and help with vaccine uptake.<sup>25</sup> Private-public partnerships can strengthen the health system as well as partnerships with industry.<sup>25</sup> To deal with COVID-19 vaccine hesitancy, the WHO recommends a pre-emptive pro-vaccination strategy that psychologically immunises the public against misinformation by proactively reporting trusted information correct information from reputable sources, encourage others to share correct information to drown out all the misinformation and to never share fake news or misinformation.

## Conclusion

Immunisation is a reliable approach to ensure child survival and healthy living. All sectors of public health should strive to attain SDG3. It is imperative to capitalise on identified opportunities to increase access to and improve vaccination coverage by using local pharmacy's as possible vaccination centres. Increasing HCP capacity, community mobilisation for demand creation and to increase vaccine confidence, supply chain management and cold chain logistics for additional vaccines and reporting and managing adverse events following immunisation will collectively ensure communal health living.

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