

Building Better Immunity: A Life Course Approach to Healthy Longevity



CONTEXT



The world is undergoing a profound demographic shift: there are now more persons older than 65 than children younger than 5. However, quality of life is not improving correspondingly.

As we age, our immune system weakens (**immunosenescence**) and leaves the body exposed to diseases to which it had gained immunity earlier. Also, chronic diseases exacerbate health outcomes when coupled with infections later in life.

There are multiple missed opportunities in the Americas for people to fully benefit from vaccines at all stages of life.



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KEY MESSAGE



National immunization programs are a public health intervention that can be **adjusted** to close immunity gaps at different stages of life and among the groups at highest risk of infection, hospitalization and death.

While they were created to reduce infant mortality rates, they must be redesigned to provide protection beyond childhood.

IMMUNIZATION ACROSS THE LIFE COURSE



The **Life Course Approach (LCA)** is a framework to help public health officials identify key moments where health interventions can obtain maximum benefits for the well-being of individuals and communities.

The LCA principles can be applied to national immunization programs. It can inform the development of vaccination platforms that:

- Minimize the effects of immunosenescence by closing the most urgent immunity gaps for each age group.
- Improve health trajectories by integrating vaccination services with other age-appropriate health practices.
- Address health inequities and help achieve greater health outcomes with fewer resources.

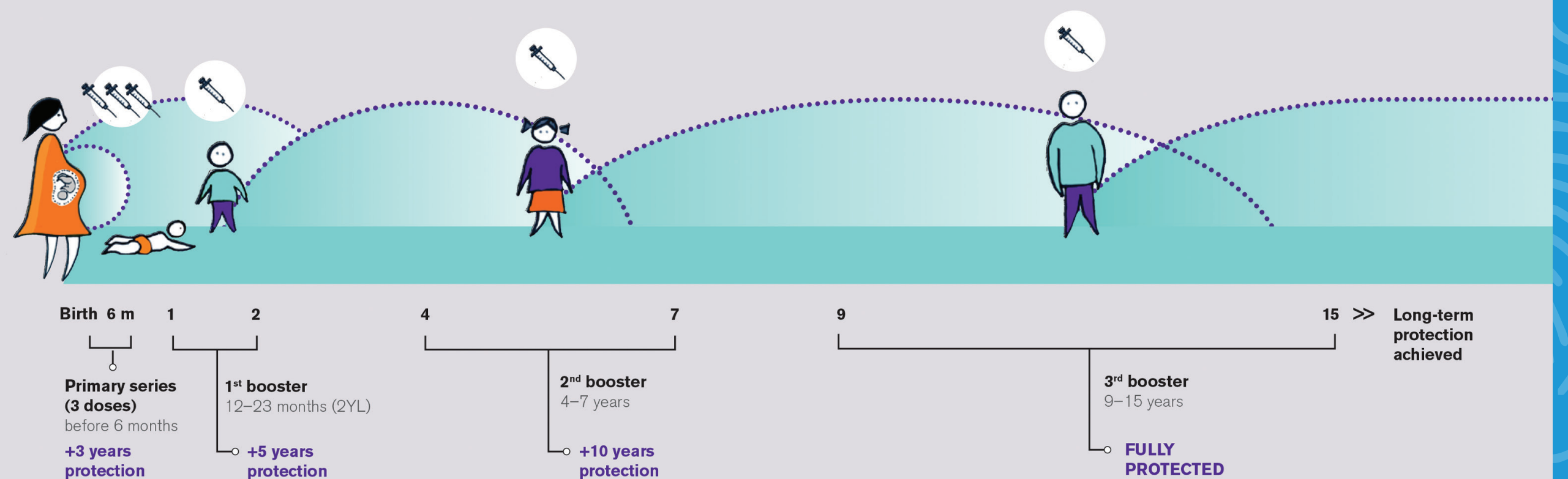
Health is a component of and a key resource for human development. Individuals and populations are affected by continuous interactions between themselves and the exposures and experiences of their environment – both over time and across generations. It is never too late to build health.



Source: Building Health Throughout the Life Course. Concepts, Implications, and Application in Public Health. <https://iris.paho.org/handle/10665.2/53409>.

EXAMPLES OF IMMUNIZATION ACROSS THE LIFE COURSE

- **Individuals:** Administration of the vaccine against the Human Papilloma Virus (HPV) to adolescent girls. One dose of this vaccine should be delivered at the sensitive/critical periods of a person's life – in this case, prior to sexual intercourse – to minimize the risk of developing precancerous and cancerous lesions later on.
- **Families:** Administration of the vaccine against tetanus, diphtheria, and pertussis (Tdap) to pregnant women, since a newborn's immunity largely depends on the antibodies received in utero. Vaccination services with intergenerational benefits are cost-effective strategies that optimize health outcomes across two generations.
- **Communities:** Prioritization of COVID-19 vaccines to high-risk groups during the pandemic. By lowering the morbidity and mortality rate in population groups, the burden of disease of the entire community is lowered as well – since high-risk groups are the greatest contributors.



Source: World Health Organization. Protecting all against tetanus: guide to sustaining maternal and neonatal tetanus elimination (MNTE) and broadening tetanus protection for all populations. Geneva: WHO; 2019 [cited 9 March 2023]. Available from: <https://apps.who.int/iris/handle/10665/329882>.

CONSIDERATIONS FOR APPLYING A LIFE COURSE APPROACH TO NATIONAL IMMUNIZATION PROGRAMS



We propose that any redesign of the immunization program in accordance with the principles of the LCA should focus on six elements of a national health system.

- **Advocacy:** Promote expanded vaccination services that offer vaccine doses to all eligible persons according to their age and level of risk.
- **Financing:** Ensure adequate and consistent financial resources to engage additional human resources and supplies. Such resources should be seen as a long-term investment given the economic and social benefit of immunizations.
- **Person-centered services:** Create synergy between vaccination services for all age groups and other essential health services that are person-centered, age-appropriate and designed around users' needs and demands.
- **Human resources:** Communicate the positive impact of expanded immunization programs to public health officials, health administrators, health providers and vaccinators through trainings and supportive supervisory visits. Any encounter with the health system must become an opportunity to offer missing doses.
- **Information systems:** Document the benefits of expanded immunization programs to assess the impact of vaccines on broader population health outcomes, healthcare services and public health priorities.
- **Equity:** Establish targeted strategies to reach vulnerable populations. Outreach operations and cultural dialogues are well-documented activities that help reduce inequalities in vaccination coverage rates across the life course.

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