APPENDIX

Building better immunity

A life course approach to healthy longevity
APPENDIX

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A life course approach to healthy longevity

Washington, D.C., 2024

PAHO Pan American Health Organization World Health Organization
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Acknowledgments

This publication is an Appendix to the technical document "Building better immunity: A life course approach to healthy longevity", with the contributions of several experts within and outside the Pan American Health Organization (PAHO). The lead authors and editors of the publication are Margherita Ghiselli, Carolina Hommes, Ana Lucia Rosado Valenzuela, Enrique Vega, and Evelyn Balsells.

We also thank Benjamin Puertas, Yohana Diaz de Valle, Sonja Caffe, Oscar San Roman, Mercedes Colomar, Bremen de Mucio, Francisco Nogareda, Claudio Sosa, Patricia Morsch, and Roxana Badiei for their input and critical review of the content in this Appendix.
This Annex provides technical guidance on the integration of immunization programs into the primary healthcare system with a life course perspective. It includes lists of possible activities aiming to integrate immunization operations for four target groups: pregnant women, adolescents, healthcare workers (HCWs), and older adults into the primary care system to bolster vaccination coverage rates. The activities listed can be implemented by managers of National Immunization Programs and vaccinators. They should be assessed, customized, implemented, and possibly expanded by Member States to align with the national and local contexts.
Integrating immunization programs for PREGNANT WOMEN into the primary healthcare system with a life course perspective

All women need access to high-quality care in pregnancy, and during and after childbirth. During pregnancy, major adaptations occur in the maternal immune system to protect the mother and her future baby from pathogens while avoiding detrimental immune responses against the fetus. Since maternal, fetal, and newborn health are closely linked, vaccination in pregnant women has direct benefits for the health of the newborn up to six months of life. Health teams have a great responsibility in terms of listening, accompanying, and guiding to promote vaccination and ensure the protection of both mother and child. Additionally, health teams are well positioned to join efforts and prevent missed opportunities for vaccination for women, particularly during antenatal care, immediately after labor, and subsequent visits for family planning or general health.

The following list of possible activities aims to integrate immunization operations for PREGNANT WOMEN into the primary care system with a life course perspective to bolster vaccination coverage rates for this group. These activities can be implemented by managers of National Immunization Programs (Table 1) and vaccinators (Table 2). They should be assessed, customized, implemented, and possibly expanded by Member States to align with the national and local contexts.
**Managers**

Table 1. Examples of activities that MANAGERS of the National Immunization Program can implement to integrate immunization activities for PREGNANT WOMEN into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td><strong>Stewardship and advocacy</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Regularly review and update national guidelines to include that:</td>
</tr>
<tr>
<td></td>
<td>• Vaccines prevent infection transmission between mother and fetus during gestation, delivery, and/or the breastfeeding period.</td>
</tr>
<tr>
<td></td>
<td>• During pregnancy, major adaptations occur in the maternal immune system to protect the mother and her future baby from pathogens while avoiding detrimental immune responses against the fetus.</td>
</tr>
<tr>
<td></td>
<td>• Work with the National Immunization Technical Advisory Group (NITAG) to ensure the recommended vaccines by WHO for pregnant women are available and their uptake promoted in the country.</td>
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<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
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<tr>
<td></td>
<td>• Regularly review and update national guidelines to include that:</td>
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<tr>
<td></td>
<td>• Pregnancy is a hypercoagulable state, with a four-fold increased risk of deep vein thrombosis.</td>
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<tr>
<td></td>
<td>• Vaccines can prevent infection transmission from HCWs, caregivers, and family members to pregnant women and newborns.</td>
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<tr>
<td></td>
<td>• Maternal antibodies can provide protection against the influenza virus and the respiratory syncytial virus to newborns up to 6 months of life – since babies cannot be vaccinated themselves.</td>
</tr>
<tr>
<td></td>
<td>• Over 90% of infants infected with hepatitis B virus from their mothers, through exposure to blood and cervical fluid during birth, will go on to develop chronic infection. Neonatal vaccination can prevent 80–95% of these cases.</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Include vaccination as a strategy for healthy living for both pregnant women and newborns.</td>
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<tr>
<td></td>
<td>• Promote strategies that increase access to vaccination and minimize socioeconomic and language barriers for pregnant women.</td>
</tr>
<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
</tr>
<tr>
<td></td>
<td>• Ensure vaccination guidelines prioritize pregnant women who are at very high risk of infection because of their comorbidities and/or living conditions.</td>
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<tr>
<td></td>
<td>• Develop technical guidance that provides options for pregnant women who will not/cannot receive one or more vaccines.</td>
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<tr>
<td></td>
<td>• Provide additional resources to ensure the availability of sufficient vaccine doses for all eligible pregnant women (especially during seasonal vaccination periods and during emergencies).</td>
</tr>
<tr>
<td><strong>Human resources and financing</strong></td>
<td><strong>PRIORITY</strong></td>
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<tr>
<td></td>
<td>• Develop costed operational plan to reach 100% pregnant women (including those who do not use prenatal care services).</td>
</tr>
<tr>
<td></td>
<td>• Develop guidance documents on how to pair vaccination services for pregnant women with prenatal care services to increase cost-effectiveness and compliance with the vaccination program.</td>
</tr>
<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
</tr>
<tr>
<td></td>
<td>• Provide resources to engage pregnant women, their family members, and prenatal service providers on the topic of vaccines and vaccination.</td>
</tr>
<tr>
<td></td>
<td>• Estimate cost savings associated with vaccines that prevent chronic conditions (e.g., hepatic cancer, cervical cancer) and/or seasonal disease burden (e.g., influenza) in the maternal-childhood population.</td>
</tr>
<tr>
<td></td>
<td>• Estimate the reduction in long-term healthcare costs resulting from the prevention of illnesses (e.g., influenza, COVID-19) for the mother, as well as for the baby (hepatitis B, tetanus, respiratory syncytial virus).</td>
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<tr>
<td>Component</td>
<td>Examples</td>
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</tbody>
</table>
| Organization and service delivery      | **PRIORITY**  
  • Develop standard operating procedures to screen women of reproductive age or pregnant women for missing vaccine doses.  
  • Provide additional resources to implement catch-up vaccination services for all women during prenatal health visits, postnatal check-ups, or baby wellness visits.  
  
  **ADDITIONAL**  
  • Develop standard operating procedures to ensure that vaccination services are paired with access to additional essential health services for this group where needed (i.e., growth monitoring/nutritional counseling, vitamin A supplementation, distribution of long-lasting insecticidal nets, deworming, family planning services, HIV services, hygiene kit distribution, health counseling, and gynecologist visits).  
  • Provide resources to implement:  
    • Additional vaccination services during influenza season.  
    • The rapid deployment of vaccination services during public health emergencies.  
    • Vaccination services through community-based outreach sites (e.g., pharmacy sites, places of worship, community and daycare centers, weekly markets, workplaces, banks, supermarkets).  
    • Vaccination services through mobile teams (e.g., house-to-house). |
| Demand generation and community engagement | **PRIORITY**  
  • Provide talking points to obstetric practitioners to help them frame infectious disease prevention for women and infants as a routine part of obstetric care, presenting vaccines as a standard part of anticipatory guidance during first obstetric visits.  
  
  **ADDITIONAL**  
  • Update communication materials that target pregnant women to address current questions and concerns, trends in misinformation and infodemia.  
  • Engage community partners to disseminate information, identify where and how to target pregnant women, and provide transportation to vaccination sites.  
  • Promote dialogues between prenatal and pregnant women and vaccination professionals to discuss benefits and concerns. |
| Information systems                    | **PRIORITY**  
  • Support the development of methodologies and tools to estimate the number of pregnant women to be vaccinated (consider the number of live births reported in the previous year).  
  • Conduct periodic analyses of vaccination coverage with vaccines against tetanus and diphtheria (Td), influenza, pertussis, and hepatitis B among pregnant women to identify immunity gaps and provide additional vaccine doses where needed.  
  
  **ADDITIONAL**  
  • Estimate the percentage of pregnant women with at least four prenatal care visits.  
  • Measure coverage with the birth dose of vaccine against hepatitis B and Bacillus Calmette-Guerin (BCG) against tuberculosis within the first 24 hours of life.  
  • Implement monitoring and evaluation analyses of vaccine coverage with disaggregated data by age group, location, presence of comorbidities, and vaccine dose (primary series vs. booster).  
  • Monitor vaccination uptake and health outcomes across the life span by using electronic immunization records.  
  • Develop indicators to monitor the impact of vaccination on the morbidity and mortality rate of pregnant women.  
  • Monitor the occurrence of vaccine-preventable diseases (VPDs) outbreaks at the subnational level and their impact on the health of pregnant women.  
  • Conduct surveillance of events supposedly attributable to vaccination or immunization (ESAVI) among pregnant women. |
| Training                               | **PRIORITY**  
  • Offer training/refresher sessions for health providers to explicitly address the importance of vaccination with all obstetric patients. Counseling should focus on the effectiveness and safety of vaccination for both mother and infant. |
<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
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</table>
| **Evaluation and research**   | **PRIORITY**  
|                               | • Include pregnant women in clinical trials for the development of new vaccines.  
|                               | • Implement studies to assess pregnant women’s barriers to vaccine uptake (e.g., COVID-19 vaccine) during pregnancy.  
|                               | • Implement studies of behavioral and social drivers (BeSD) among pregnant persons toward vaccination and vaccines.  
|                               | **ADDITIONAL**  
|                               | • Assess the impact of vaccination on burden of disease (e.g., influenza) following vaccination sessions administered before the start of the season.  
|                               | • Implement a cohort study to assess the impact of vaccination on short- and long-term health conditions among vaccinated pregnant women and their children vs. non-vaccinated pregnant women.  
|                               | • Conduct operational research of locations that serve pregnant women (e.g., community centers, noncommunicable disease clinics, physiotherapy clinics, pharmacy sites, community and daycare centers, workplaces, women’s associations) to improve the availability and uptake of vaccines for this group. |
| **Vaccinators**               | **Table 2. Examples of activities that VACCINATORS within the National Immunization Program can implement to integrate immunization activities for PREGNANT WOMEN into the primary care system within the framework of a life course approach.**  
| **Component**                 | **Examples**                                                                                                                                                                                                                                                                                                                                 |
| **Stewardship and advocacy**  | **PRIORITY**  
|                               | • Share scientific evidence with pregnant women that vaccines prevent infection transmission between mother and fetus during gestation, delivery, and/or the breastfeeding period. Use language that can be easily understood by lay persons.  
|                               | **ADDITIONAL**  
|                               | • Share scientific evidence with pregnant women that vaccines can prevent infection transmission from friends, colleagues, and family members to pregnant women and newborns.  
| **Equity**                    | **PRIORITY**  
|                               | • When preparing a vaccination session, ensure the availability of sufficient vaccine doses for all eligible pregnant women (especially during seasonal vaccination periods and during emergencies).  
|                               | **ADDITIONAL**  
|                               | • Organize outreach/mobile vaccination teams to reach pregnant women who are at very high risk of infection because of their comorbidities and/or living conditions.  
|                               | • Be prepared to discuss alternative means of protection for pregnant women who will not/cannot receive vaccines.  
| **Human resources and financing** | **PRIORITY**  
|                               | • Develop the yearly budget to include vaccine doses and materials for 100% of pregnant women in the catchment area (including those who do not use prenatal care services).  
<p>|</p>
<table>
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<tr>
<th>Component</th>
<th>Examples</th>
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</table>
| **Organization and service delivery** | **PRIORITY**  
• Have a list of all vaccine doses recommended by WHO and the Ministry of Health for pregnant women somewhere visible inside the vaccination site.  
• Offer the option to complete additional primary series or booster doses during prenatal visits, postnatal check-ups, or baby wellness visits (including COVID-19 vaccine doses).  
• Ensure that the time and place of vaccination services meet the needs of most pregnant women in a specific area.  
**ADDITIONAL**  
• Refer pregnant women to other additional essential health services for this age group where needed (i.e., growth monitoring/nutritional counseling, vitamin A supplementation, distribution of long-lasting insecticidal nets, deworming, family planning services, HIV services, hygiene kit distribution, and health counseling).  
• Increase the number of vaccination sessions during influenza season.  
• Increase the number of vaccination sessions during public health emergencies.  
• Organize vaccination sessions at community-based outreach sites (e.g., pharmacy sites, places of worship, community and daycare centers, weekly markets, workplaces, banks, supermarkets).  
• Offer vaccination services through mobile teams (e.g., house-to-house).  
• Offer vaccination services through fixed vaccination sites that offer prenatal health services, postnatal check-ups, or baby wellness visits.  

| **Demand generation and community engagement** | **PRIORITY**  
• Discuss infectious disease prevention and promote the benefits of routine immunization during pregnancy, birth, and first months of life as part of the prenatal care package.  
• Address questions and concerns that women in the community have on vaccines and vaccination during pregnancy.  
• Collect feedback from pregnant community members, their families, prenatal healthcare professionals, and midwives to improve service delivery.  
**ADDITIONAL**  
• Work with community partners to disseminate information, identify where and how to target pregnant women, and provide transportation to vaccination sites.  
• Promote dialogues between prenatal and pregnant women and vaccination professionals to discuss benefits and concerns.  
• Identify “Vaccine Champions” from the community who collaborate in addressing questions and concerns about vaccination.  

| **Information systems** | **PRIORITY**  
• Estimate the number of pregnant women to be vaccinated (consider the number of live births that occurred in the catchment area in the previous year).  
• Promote the use and retention of home-based records (HBRs) for all vaccinated pregnant women and newborns to ensure they know their vaccination status.  
**ADDITIONAL**  
• Record and monitor vaccine uptake for each pregnant woman during the first prenatal visit.  
• Hold discussions with pregnant women to gather preferences on vaccine strategy and sites.  

| **Training** | **PRIORITY**  
• Offer training/refresher sessions for vaccinators who work in locations that serve pregnant women and their children (e.g., community centers, pharmacy sites, community and daycare centers, workplaces, schools, supermarkets, churches).  
**ADDITIONAL**  
• Take training/refresher sessions on new vaccines and vaccination practices on a regular basis.  

| **Evaluation and research** | **PRIORITY**  
• Identify missed opportunities or low vaccine uptake among pregnant women.  
**ADDITIONAL**  
• If there is an opportunity, recommend to pregnant women to join clinical trials for the development of new vaccines.  
• Support operational research in the workplace to improve the availability and uptake of vaccines among pregnant women. |
Adolescents

Integrating immunization programs for ADOLESCENTS into the primary healthcare system with a life course perspective

Young people are a sizable age group, comprising approximately 30% of the population in Latin America and the Caribbean. Investing in their health and education enables productivity and economic growth, and protects investments made in childhood – such as vaccination – while securing the health of the future adult population. Also, adolescence is a time of transition: childhood immunity may be waning while unfolding behavioral changes (e.g., initiation of sexual activity) expose young people to new risks of infection. Therefore, the application of primary series, booster, and catch-up vaccine doses is critical to close emerging immunity gaps. Also, adolescence is the time to actively involve young persons in health initiatives, since their enthusiasm, passion, and influence can greatly impact the behavior and health of their peers, families, and communities – and carry their interest in healthy behaviors into adulthood.

The following list of possible activities aims to integrate immunization operations for ADOLESCENTS into the primary care system with a life course perspective to bolster vaccination coverage rates for this age group. These activities can be implemented by managers of National Immunization Programs (Table 3) and vaccinators (Table 4). They should be assessed, customized, implemented, and possibly expanded by Member States to align with the national and local contexts.
Table 3. Examples of activities that MANAGERS of the National Immunization Program can implement to integrate immunization activities for ADOLESCENTS into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Stewardship and advocacy    | **PRIORITY**  
  • Include vaccination as a strategy for healthy living among adolescents aged 10–19 years old in the national immunization multi-annual strategic plan.  
  • Include adolescents as members of the planning and implementation team for health activities so they can inform how to reach their families, communities, and the other adolescents.  
  • Work with the NITAG to develop and promote recommendations to increase vaccination coverage rates among adolescents.  
  **ADDITIONAL**  
  • Promote the inclusion of adolescents as an important group for vaccination to support the sustainability of vaccination operations for this population group and facilitate the introduction of any new vaccines.  
  • Work with advocacy organizations for youth rights to promote vaccination for their members and clients.  
  • Disseminate scientific evidence to support that a person should receive the second booster dose of tetanus toxoid-containing vaccines at ages 9–15 years.  
    • Resource: *Ad-hoc TAG Final Report, 2018*  
  • Disseminate scientific evidence to public health officials and vaccinators that the HPV vaccine is highly effective in preventing cervical and other cancers later in life.  
    • Resource: *X Ad Hoc Meeting of the PAHO (TAG) on Vaccine-Preventable Diseases, 31 May 2023. Virtual*  
  • Disseminate scientific evidence among vaccinators and other stakeholders (e.g., teachers, parents, clinicians) that vaccination can prevent infections and transmission among friends, partners, and family members.  
    • Resource: Use the WHO guidance *Making Every School a Health Promoting School*. |
| Equity                      | **PRIORITY**  
  • Prioritize adolescents aged 10–19 years old who are at very high risk of VPDs because of their comorbidities and/or living conditions.  
  **ADDITIONAL**  
  • Support clinics, schools, and youth recreation centers to develop clear options for adolescents aged 10–19 years old who cannot or will not receive one or more vaccines.  
  • Develop, monitor, and evaluate immunization strategies that consider the varying socioeconomic determinants affecting vaccine access and acceptance among adolescents. |
| Human resources and financing| **PRIORITY**  
  • Develop the yearly budget to include vaccine doses and materials for 100% of adolescents in the country (including those who do not attend public schools or have dropped out of school).  
  **ADDITIONAL**  
  • Build capacity of human resources to effectively communicate with adolescents. |
<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Organization and service delivery** | **PRIORITY**  
  - Promote the implementation of the PAHO guidance *Health Services in School*  
  - Develop templates of the vaccination operational plan for health services in schools.  
    - Resource: WHO, *Global consultation on implementing vaccination checks at school*  
  - Refer adolescents to other additional essential health services for this age group where needed (i.e., distribution of long-lasting insecticidal nets, seasonal malaria chemoprevention, deworming, family planning services, HIV services, male circumcision, hygiene kit distribution, and health counseling).  
  **ADDITIONAL**  
  - Develop standard operating procedures to ensure that missing vaccine doses are offered to adolescents aged 10–19 years old at every encounter with the healthcare system.  
  - Develop standard operating procedures to ensure that all adolescents who come to the vaccination site for any reason are screened for any missing vaccine doses.  
  - Provide additional resources to implement:  
    - Outreach/mobile vaccination teams to reach adolescents who are at very high risk of infection because of their comorbidities and/or living conditions.  
    - Vaccination sessions for adolescents (and their families) through community-based outreach sites (e.g., pharmacy sites, places of worship).  
    - Vaccination through mobile teams (e.g., house-to-house) in collaboration with the health services in schools.  
    - Catch-up vaccination services for all adolescents upon start of junior and/or high school. |
| **Demand generation and community engagement** | **PRIORITY**  
  - Ensure the participation of adolescents in the development of all communications materials.  
  - Disseminate communication materials that target adolescents and their parents/guardians to address current questions and concerns, trends in misinformation and infodemia.  
  - Hold discussions with adolescents in the community, their families, and pediatricians to improve service delivery.  
    - Resource: PAHO's *Knowledge Dialogues Methodology* is a useful tool for this discussion.  
  **ADDITIONAL**  
  - Develop communication strategies and materials aimed at increasing the acceptability of vaccination.  
  - Develop frequently asked questions documents and information sessions to address current questions and concerns that adolescents in the community have on vaccines and vaccination.  
    - Resource: PAHO's *Youth from Peru, Belize and Montserrat work together with PAHO to promote COVID-19 vaccination*  
  - Promote spaces for dialogue between adolescents, pediatricians, and physicians/nurses within the school system and in the community to discuss benefits and concerns around vaccination.  
    - Resource: Use the WHO guidance *Making Every School a Health Promoting School*.  
  - Ensure that all documents and sessions are culturally sensitive and available in local languages. |
| **Information systems** | **PRIORITY**  
  - Estimate the number of adolescents aged 10–19 who live in the country (including those who do not attend public schools or have dropped out of school). Include both official and nonofficial residents.  
  **ADDITIONAL**  
  - Conduct periodic analyses of vaccination coverage with vaccines administered to adolescents aged 10–19 years old to identify immunity gaps and provide catch-up doses during the school year, where needed.  
  - Implement monitoring and evaluation analyses with disaggregated data by age, sex, and location.  
  - Conduct surveillance of ESAVI among adolescents. |
## Component Examples

### Training

**PRIORITY**
- Develop training curricula for public health officials and vaccinators that focus on comprehensive and integrated attention to adolescents attending the healthcare facilities.

**ADDITIONAL**
- Implement train-the-trainer protocols in schools to disseminate information on vaccines and vaccination.
- Offer training/refresher sessions for vaccinators who work in pediatric units, schools, pharmacies, and recreational centers.
- Ensure the participation of adolescents in the development of all training materials.

### Evaluation and research

**PRIORITY**
- Implement study of BeSD among adolescents toward vaccination and vaccines.
  - Resource: WHO, *Increasing vaccination demand and uptake*

**ADDITIONAL**
- Implement a cohort study to assess the impact of vaccination on short- and long-term health conditions among vaccinated adolescents vs. adolescents who were not vaccinated or were vaccinated after their 19th birthday.
- Conduct cost-effectiveness analyses that estimate the cost savings associated with vaccines that prevent chronic conditions (e.g., cervical cancer) later in life.
- Conduct cost-effectiveness analyses that estimate the reduction in long-term healthcare costs resulting from preventing illnesses among adolescents (e.g., cancer) now and later in life.

### Vaccinators

**Table 4.** Examples of activities that **VACCINATORS** within the National Immunization Program can implement to integrate immunization activities for **ADOLESCENTS** into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Stewardship and advocacy** | **PRIORITY**
  - Work with advocacy organizations for youth rights to promote vaccination for their members and clients at the local level.  
  - Disseminate scientific evidence among adolescents that the HPV vaccine is highly effective in preventing cervical and other cancers later in life.  
  - Disseminate scientific evidence among adolescents that vaccines can prevent infection transmission from friends and family members to themselves. |
| **Equity**                 | **PRIORITY**
  - Organize outreach/mobile vaccination teams to reach adolescents who are at very high risk of infection because of their comorbidities and/or living conditions.  
  - Be prepared to discuss alternative means of protection for adolescents who will not/cannot receive one or more vaccines. |
| **Human resources and financing** | **PRIORITY**
  - Develop the yearly budget to include vaccine doses and materials for 100% of adolescents in the catchment area (including those who do not attend public schools or have dropped out of school). |
<table>
<thead>
<tr>
<th>Component</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization and service delivery</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Have a list of all vaccine doses recommended for adolescents by the Ministry of Health and place it somewhere visible inside the vaccination site.&lt;br&gt;• Ensure that missing vaccine doses are offered to adolescents aged 10–19 years old at every encounter with the healthcare system.&lt;br&gt;• Ensure that the time and place of vaccination services meet the needs of most adolescents in a specific area.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Refer adolescents to other additional essential health services for this age group where needed (i.e., distribution of long-lasting insecticidal nets, seasonal malaria chemoprevention, deworming, family planning services, HIV services, male circumcision, hygiene kit distribution, and health counseling).&lt;br&gt;• Establish a reminder and recall system to assist adolescents with completion of primary series and booster doses.&lt;br&gt;• Organize vaccination sessions for adolescents (and their families) through community-based outreach sites (e.g., pharmacy sites, places of worship).&lt;br&gt;• Offer vaccination services through mobile teams (e.g., house-to-house).&lt;br&gt;• Offer catch-up vaccination services for all adolescents upon the start of junior and/or high school.</td>
</tr>
<tr>
<td><strong>Demand generation and community engagement</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Address current questions and concerns that adolescents in the community have on vaccines and vaccination.&lt;br&gt;• Discuss vaccination with pediatricians and physicians/nurses within the school system to help them frame infectious disease prevention for adolescents aged 10–19 years old as a routine part of pediatric and school-based care.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Use motivational interview as a tool to minimize barriers during the vaccination visit.&lt;br&gt;• Work with community partners to disseminate information, identify where and how to target adolescents, and provide transportation to vaccination sites.&lt;br&gt;• Promote dialogue between adolescents and pediatricians and physicians/nurses within the school system to discuss the benefits and concerns around vaccination.</td>
</tr>
<tr>
<td><strong>Information systems</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Estimate the number of adolescents in the catchment area (including those who do not attend public schools or have dropped out of school). Include both official and nonofficial residents.&lt;br&gt;• Promote the use and retention of HBRs for all vaccinated adolescents to ensure caregivers know their vaccination status.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Record and monitor vaccine uptake for each adolescent when they start junior or high school, in accordance with national laws for enrollment.&lt;br&gt;• Update the electronic immunization registry of each adolescent after each vaccine dose administered so that there is a record of the individual's vaccination status.&lt;br&gt;• Collect data through surveys, interviews, community meetings, or focus groups for adolescents and guardians to gather preferences on vaccine strategy and sites.</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Explicitly address the importance of vaccination with all adolescents. Counseling should focus on the effectiveness and safety of vaccination for this population group.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Take training/refresher sessions on new vaccines and vaccination practices on a regular basis.&lt;br&gt;• Build understanding and capacity for adolescent development and effective communication with adolescents.&lt;br&gt;• Work with schools to increase the level of health literacy among adolescents, with a focus on vaccination.</td>
</tr>
<tr>
<td><strong>Evaluation and research</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Identify missed opportunities or low vaccine uptake among adolescents aged 10–19 years old.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Support operational research to improve the availability and uptake of vaccines in adolescents.</td>
</tr>
</tbody>
</table>
Healthcare workers

Integrating immunization programs for HEALTHCARE WORKERS (HCWs) into the primary healthcare system with a life course perspective

Health workers are at an increased risk of exposure to some communicable diseases because of their contact with patients or infective material in their working environment. Also, there is a risk that infected health workers could contribute to nosocomial transmission of disease to vulnerable patients at higher risk of severe illness, complications, and death. Protection of health workers through vaccination is an important part of infection prevention and control programs in healthcare settings, as well as a cornerstone of occupational health and safety programs, and it is essential for the proper functioning and resilience of health systems.

Recognizing the importance of offering and increasing vaccination for this group is essential to build an effective adult immunization program. Vaccination of HCWs should be incorporated with a life course perspective into comprehensive and gender-sensitive occupational health and safety programs, according to national immunization and occupational health and safety policies. Health authorities, managers of health facilities, those responsible for occupational health, professional associations of health workers, and employers play an important role to ensure and promote vaccination of HCWs.

The following list of possible activities aims to integrate immunization operations for HCWs into the primary care system with a life course perspective to bolster vaccination coverage rates for this population group. In this document, we focus on frontline HCWs who operate in clinical settings (defined as physicians, nurses, pharmacologists, dentists, and midwives). These activities can be implemented by managers of National Immunization Programs working in coordination with authorities, health facility managers, and those responsible for occupational health (Table 5) and vaccinators (Table 6). They should be assessed, customized, implemented, and possibly expanded by Member States to align with national and local contexts.
**Managers**

Table 5. **Examples of activities that MANAGERS of the National Immunization Program working in coordination with authorities, health facility managers, and those responsible for occupational health can implement to integrate immunization activities for HCWs into the primary care system within the framework of a life course approach.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stewardship and advocacy</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Promote periodic vaccination as part of a well-being program for HCWs.&lt;br&gt;• Include vaccination as a strategy for the promotion of healthy work environments for HCWs.&lt;br&gt;• Work with the NITAG to ensure the recommended vaccines by WHO for HCWs are available in the country.</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Adopt a broad definition of HCW, to include all staff who are at increased risk of infection from VPDs because of their role in health services (e.g., frontline staff with clinical or public health roles).</td>
</tr>
<tr>
<td><strong>Human resources and financing</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Develop the yearly budget to include vaccine doses and materials to administer vaccines to 100% of HCWs.&lt;br&gt;• Liaise regularly (e.g., twice/year) with Human Resources to ensure that a list of HCWs by health department is updated.&lt;br&gt;• Develop/review requirements for HCW vaccination according to their level of risk due to occupational exposure to VPDs (e.g., intensive care unit vs. neonatal ward vs. general practice vs. emergency response).</td>
</tr>
<tr>
<td><strong>Organization and service delivery</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Coordinate programs and activities between HCWs that present immunization as a strategy to prevent infections and transmission to patients, colleagues, family members, and other close contacts.&lt;br&gt;• Promote peer-to-peer vaccination to increase the number of vaccinators, especially for the implementation of seasonal vaccination campaigns.</td>
</tr>
<tr>
<td>Component</td>
<td>Examples</td>
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</tr>
</tbody>
</table>
| Demand generation and community engagement | **PRIORITY**  
- Provide information on the impact of the HCW vaccination program on patients, colleagues, and family members (e.g., outbreak prevention, continuity of healthcare services).  
- Develop resources for HCWs on how to communicate with patients and the public on the benefits of vaccination.  

**ADDITIONAL**  
- Develop standard operating procedures to promote dialogue (e.g., peer-to-peer, “Vaccine Champions”) to clarify policies, benefits, and doubts about vaccination and alternatives that HCWs may have.  
- Develop communication strategies to engage with HCWs and other human resources in the event of mandatory vaccination practices.  
- Develop communication strategies on why HCWs may be prioritized for vaccination during emergencies.  
- Promote the engagement of HCWs as advocates for vaccines and vaccination for their patients and peers. |
| Information systems          | **PRIORITY**  
- Develop methodologies and tools to estimate the number of HCWs to be included in vaccination operations.  

**ADDITIONAL**  
- Where possible, ensure electronic information registries identify individuals as HCWs to record vaccination uptake and health outcomes across the professional lifespan of HCWs (e.g., upon entering the workforce, transferring to a different department, and moving to the subsequent age group).  
- Develop indicators to monitor the impact of HCW vaccination on their morbidity and mortality rates and of their patients.  
- Conduct surveillance of Events Supposedly Attributable to Vaccination or Immunization (ESAVI) among HCWs. |
| Training                     | **PRIORITY**  
- Support the development of training sessions that discuss the vaccination policies of HCWs in healthcare sites.  
- Develop training courses for HCWs related to the well-being of health workers, emphasizing disease prevention through vaccination and offering specific information on different levels of risk.  

**ADDITIONAL**  
- Ensure the academic curriculum of HCWs in training includes the benefits of vaccines and vaccination in the workplace.  
- Offer periodic training/refresher training sessions to HCWs on immunization across the life course and its benefits to individuals and communities.  
- Provide information on the impact of the HCW vaccination program on patients, colleagues, and family members (e.g., outbreak prevention, continuity of healthcare services). |
| Evaluation and research      | **PRIORITY**  
- Monitor the occurrence of VPD outbreaks in healthcare settings and their impact on the health of HCWs and patients.  
- Estimate the impact of vaccination on a priority group of HCWs during phased vaccine deployment.  
- Implement study of BeSD among HCWs toward vaccination and vaccines.  

**ADDITIONAL**  
- Promote the inclusion of the component of working well-being, emphasizing the importance of vaccination for protection against VPDs among HCWs, in health career study programs.  
- Conduct qualitative research to identify the barriers for vaccination among HCWs to inform the production of materials focused on generating demand for vaccination. |
### Vaccinators

**Table 6.** Examples of activities that VACCINATORS within the National Immunization Program can implement to integrate immunization activities for HCWs into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stewardship and advocacy</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Regularly review the vaccination requirements in your place of work (by department) to contribute to a healthy work environment.</td>
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<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
</tr>
<tr>
<td></td>
<td>• Review vaccination requirements when entering the workforce and when changing departments.</td>
</tr>
<tr>
<td></td>
<td>• Share scientific evidence with other HCWs that vaccines are safe and used to prevent infections and transmission to patients, colleagues, family members, and other close contacts.</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Work with the Human Resources (HR) or Occupational Health department to ensure that vaccines are available and offered to HCWs who are at very high risk of infection because of their role in the healthcare system (e.g., intensive care unit, neonatal ward, emergency response).</td>
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<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
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<td></td>
<td>• Work with the HR department to implement alternative means of protection for HCWs who will not/cannot receive one or more vaccines.</td>
</tr>
<tr>
<td><strong>Human resources and financing</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Review vaccination requirements for HCWs by department, in collaboration with the HR department.</td>
</tr>
<tr>
<td><strong>Organization and service delivery</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Have a list of all vaccine doses recommended by WHO and the Ministry of Health for HCWs and place it somewhere visible inside the vaccination site.</td>
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<td></td>
<td>• Ensure that the time and place of vaccination services meet the needs of most HCWs. For example, offer vaccination services immediately before or after work shifts.</td>
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<tr>
<td></td>
<td>• Offer catch-up vaccination services for all HCWs once they join the workforce or when they change departments.</td>
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<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
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<tr>
<td></td>
<td>• Encourage HCWs to receive vaccine doses alongside other essential health services that are offered to this group where needed (i.e., distribution of long-lasting insecticidal nets, seasonal malaria chemoprevention, deworming, family planning services, HIV services, male circumcision, hygiene kit distribution, and health counseling).</td>
</tr>
<tr>
<td></td>
<td>• Set up additional vaccination sessions for HCWs to receive seasonal vaccines and during emergencies.</td>
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<td></td>
<td>• Set up vaccination sessions for close contacts of HCWs who may be at increased risk of VPDs (e.g., children of parents with hepatitis, HIV, etc.)</td>
</tr>
<tr>
<td><strong>Demand generation and community engagement</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Discuss options with HCWs on how to improve vaccination services delivery.</td>
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<td>• Update communication materials that target HCWs to address current questions and concerns, trends in misinformation and infodemia.</td>
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<td>• Encourage other HCWs to be advocates for vaccines and vaccination for their patients and peers.</td>
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<td><strong>ADDITIONAL</strong></td>
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<tr>
<td></td>
<td>• Provide information on the impact of the HCW vaccination program on patients, colleagues, and family members (e.g., outbreak prevention, continuity of healthcare services).</td>
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<td></td>
<td>• Address current questions and concerns that HCWs may have on vaccines and vaccination.</td>
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<td></td>
<td>• Set up discussion sessions with HCWs on why this group may be prioritized for vaccination during emergencies.</td>
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<tr>
<td></td>
<td>• Collaborate with other HCWs on how to communicate with patients and the public on the benefits of vaccination.</td>
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<td>Component</td>
<td>Examples</td>
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<tr>
<td><strong>Information systems</strong></td>
<td><strong>PRIORITY</strong></td>
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<td></td>
<td>• Work with the HR department to define the number of HCWs in each department/clinic.</td>
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<td>• Promote the use and retention of Home-Based Records (HBRs) for all vaccinated HCWs to ensure each one knows his/her vaccination status.</td>
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<td>• Establish a reminder and recall system to assist HCWs with the completion of primary series and booster doses.</td>
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<td><strong>ADDITIONAL</strong></td>
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<tr>
<td></td>
<td>• Record and monitor vaccine uptake for each HCW upon entering the workforce, transferring to a different department, and moving to the subsequent age group.</td>
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<tr>
<td><strong>Training</strong></td>
<td><strong>PRIORITY</strong></td>
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<tr>
<td></td>
<td>• Hold training sessions that discuss the vaccination policies of the department/clinic upon entering the workforce.</td>
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<td><strong>ADDITIONAL</strong></td>
</tr>
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<td></td>
<td>• Hold training/refresher sessions on new vaccines and vaccination practices on a regular basis.</td>
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<td></td>
<td>• Offer information sessions for HCWs on the benefits and administration of vaccines at the start of each influenza season or at the start of a VPD emergency.</td>
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<tr>
<td></td>
<td>• Provide periodic information sessions to HCWs on what is known and not known about a specific VPD, and what are the benefits and challenges of receiving the vaccine.</td>
</tr>
<tr>
<td><strong>Evaluation and research</strong></td>
<td><strong>PRIORITY</strong></td>
</tr>
<tr>
<td></td>
<td>• Identify missed opportunities or low vaccine uptake among HCWs.</td>
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<tr>
<td></td>
<td><strong>ADDITIONAL</strong></td>
</tr>
<tr>
<td></td>
<td>• Support operational research in the workplace to improve the availability and uptake of vaccines for HCWs.</td>
</tr>
</tbody>
</table>
Older adults

Integrating immunization programs for OLDER ADULTS into the primary healthcare system with a life course perspective

Healthy aging is a continuous process of optimizing opportunities to maintain and improve physical and mental health, independence, and quality of life throughout the life course to enable older adults to be and do what they have reason to value. This concept is especially relevant to the Americas. Between 2000 and 2050, the proportion of the world’s population aged 60 and older will rise from 11% to 22%. In Latin America and the Caribbean, by 2060 this population group will account for almost 30% of the total population. Healthy life expectancy at birth has increased since 2000, but to a lesser degree than life expectancy. Although, in 2019 life expectancy at birth was 77.2 years in the Region of the Americas, a person would be expected to live in poor health for 11 years, or 14% of the person’s life expectancy. As people age, biological changes begin to influence their immune capacity: an impaired ability to differentiate between pathogens can decrease the response to some vaccines and increase vulnerability to disease, which can cause infections to which the person was previously immune (i.e., immunosenescence). The interaction between chronic diseases and a greater presence of pro-inflammatory cells can reduce the immune system’s ability to recover. Vaccination can reduce the vulnerability of the immune system, as well as the development of chronic diseases later in life.

The following list of possible activities aims to integrate immunization operations for OLDER ADULTS into the primary care system with a life course perspective to bolster vaccination coverage rates for this age group. These activities can be implemented by managers of National Immunization Programs (Table 7) and vaccinators (Table 8). They should be assessed, customized, implemented, and possibly expanded by Member States to align with the national and local contexts.

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## Managers

Table 7. Examples of activities that MANAGERS of the National Immunization Program can implement to integrate immunization activities for OLDER ADULTS into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stewardship and advocacy</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Promote vaccination as a strategy for longevity and healthy aging for all older adults.&lt;br&gt;  • Resource: PAHO, <em>Building Better Immunity: A Life Course Approach to Healthy Longevity</em>&lt;br&gt;  • Resource: WHO, <em>Decade of Healthy Ageing: Plan of Action</em>&lt;br&gt;  • Develop strategic plans for vaccination among older adult, according to the prevalence and incidence of specific VPD, chronic diseases, and comorbidities reported in the country.&lt;br&gt;  • Work with the NITAG to develop and promote recommendations to increase vaccination coverage rates among older adults.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Promote the timely inclusion of older adults and their caregivers as an important group for vaccination to support the sustainability of vaccination operations for this population group and facilitate the introduction of any new vaccines.&lt;br&gt;  • For older adults dependent on care, it is crucial to advocate with caregivers to make sure that older adults are vaccinated. Additionally, in this scenario, caregivers’ vaccinations should also be encouraged.&lt;br&gt;  • Disseminate scientific evidence with policy makers on the benefits of vaccination, especially on the link between good health and economic contributions, as part of investment in health and wellness across the life course.&lt;br&gt;  • Share information from public health officials and vaccinators on the definition and benefits of timely immunization across the life course and the importance of vaccination before the onset of “transitional periods” as a prevention measure.&lt;br&gt;  • Work with advocacy organizations for older adults to promote vaccination for their members and clients.&lt;br&gt;  • Disseminate scientific evidence with public health officials and vaccinators on:&lt;br&gt;    • The benefits of vaccination, especially when considering multimorbidity in older adults.&lt;br&gt;      • Resource: WHO’s <em>work on the UN Decade of Healthy Ageing (2021–2030)</em>&lt;br&gt;    • The high effectiveness of influenza and COVID-19 vaccines in preventing severe disease, hospitalization, and death.&lt;br&gt;      • Resource: WHO’s <em>position papers on Influenza</em>, May 2022.&lt;br&gt;      • Resource: WHO’s <em>SAGE Roadmap for prioritizing uses of COVID-19 vaccines</em>, 10 November 2023.&lt;br&gt;    • The effectiveness of pneumococcal vaccination in preventing pneumococcal diseases, which include any type of infection caused by <em>Streptococcus pneumoniae</em> bacteria.&lt;br&gt;      • Resource: WHO, <em>Considerations for pneumococcal vaccination in older adults</em></td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Develop strategies that increase access to vaccination and minimize financial and systemic barriers for older persons.&lt;br&gt;  • Prioritize vaccination for older adults who are at very high risk of infection because of their comorbidities and/or living conditions.&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Develop standard operating procedures to verify that vaccination operations are implemented according to ethical standards (e.g., opt-out option available, inclusion of all older persons).&lt;br&gt;  • Develop standard operating procedures to support hospitals, long-term care facilities, and advocacy groups to develop clear options for older persons who will not or cannot receive one or more vaccines.&lt;br&gt;  • Develop, monitor, and evaluate immunization strategies that consider the varying socioeconomic determinants affecting vaccine access and acceptance among older adults.</td>
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<td>Component</td>
<td>Examples</td>
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<tr>
<td><strong>Human resources and financing</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Develop the yearly budget to include vaccine doses and materials for 100% of older persons (aged 60 or older) in the country by making sure planning estimates are updated each year.&lt;br&gt;&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Estimate and account for any additional costs related to the availability of sufficient vaccine doses for all eligible older adults and their caregivers (especially during seasonal vaccination periods and during emergencies).&lt;br&gt;• Estimate and account for any additional costs related to human and logistics resources needed to support mobile vaccination teams (e.g., staff, fuel, transportation) during seasonal vaccination periods or emergencies.</td>
</tr>
<tr>
<td><strong>Organization and service delivery</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Develop standard operating procedures that ensure that missing vaccine doses are offered at every encounter with the healthcare system and promote integration and referral processes between health and social services.&lt;br&gt;• Resource: WHO, <em>Vaccinating older adults against COVID-19</em>&lt;br&gt;• Develop standard operating procedures to facilitate the integration of vaccination services with other essential health services for this age group, where needed (i.e., distribution of long-lasting insecticidal nets, seasonal malaria chemoprevention, deworming, HIV services, hygiene kit distribution, and health counseling).&lt;br&gt;• Resource: WHO, <em>Reducing Missed Opportunities for Vaccination (MOV)</em>&lt;br&gt;&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Support the implementation of vaccination services through community-based outreach sites (e.g., pharmacy sites, places of worship, community and daycare centers, weekly markets, workplaces, banks, supermarkets, older people associations).&lt;br&gt;• Support the implementation of vaccination services for all persons entering assisted living facilities or long-term hospital stays. If possible, consider offering vaccination at home for those dependent on care.&lt;br&gt;• Support the implementation of additional vaccination services during the influenza season.&lt;br&gt;• Support the rapid deployment of vaccines and vaccination services during public health emergencies that affect older adults.&lt;br&gt;• Support vaccination services to close contacts of older persons who may be at increased risk of VPDs (e.g., children of parents with hepatitis, HIV, etc.)</td>
</tr>
<tr>
<td><strong>Demand generation and community engagement</strong></td>
<td><strong>PRIORITY</strong>&lt;br&gt;• Develop standard operating procedures to promote dialogues between older persons and vaccination professionals and healthcare practitioners to discuss benefits and concerns.&lt;br&gt;• Create cultural- and context-specific targeted messaging campaigns for older adults that promote the importance of immunization across the life course as part of a healthy aging process.&lt;br&gt;• Develop communication materials on why older persons may be prioritized for vaccination with vaccines that are recommended for this population during emergencies and beyond.&lt;br&gt;&lt;br&gt;<strong>ADDITIONAL</strong>&lt;br&gt;• Develop standard operating procedures to promote intergenerational dialogue on the benefits of vaccines for the family and caregiver.&lt;br&gt;• Develop guidelines and communication materials on how to engage with older persons, their caregivers, and health and well-being professionals on the topic of vaccines and vaccination.&lt;br&gt;• Deploy “Vaccine Champions” who can help address questions and concerns about getting vaccinated.&lt;br&gt;• Ensure that all documents and sessions are culturally sensitive and available in local languages and promote immunization as an important step for health in later life while reducing ageist thoughts, as is never too late to improve health and achieve benefits from interventions.</td>
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<tr>
<td>Component</td>
<td>Examples</td>
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</tbody>
</table>
| **Information systems**    | **PRIORITY**  
  • Estimate the number of older adults to be vaccinated each year, according to the country’s definition of “older adult”. Include both official and nonofficial residents.  
  **ADDITIONAL**  
  • Conduct periodic and timely analyses of coverage among older persons to identify immunity gaps, especially before the influenza season, and provide additional vaccination sessions where needed.  
  • Conduct monitoring and evaluation analyses with disaggregated data by 5-year age groups, sex, location, and vaccine dose (primary series vs. booster).  
  • Monitor the occurrence of VPD outbreaks in long-term healthcare settings and their impact on the health of older patients.  
  • Develop indicators to monitor the impact of older adults’ vaccinations on their morbidity and mortality rates, including morbimortality rates due to chronic diseases.  
  • Conduct surveillance of ESAVI among older adults. |
| **Training**               | **PRIORITY**  
  • Develop training curricula for public health officials and vaccinators that focus on comprehensive and integrated attention to older adults attending the healthcare facilities.  
  **ADDITIONAL**  
  • Disseminate training and information materials to civil society and patient advocacy organizations to broaden and extend the reach of training materials.  
  • Develop information materials on vaccines as a tool to prevent infection transmission from caregivers, family members, residents in hospitals/long-term care facilities, and/or at home, as many individuals receiving long-term care are in the community. |
| **Evaluation and research**| **PRIORITY**  
  • Implement periodic studies to document the BeSD toward vaccination among older persons.  
    • Resource: WHO, *Increasing vaccination demand and uptake*  
  **ADDITIONAL**  
  • Assess the impact of vaccination on burden of disease (e.g., influenza) following vaccination sessions administered before the start of the season.  
  • Estimate cost savings across the life course associated with vaccines that prevent chronic conditions (e.g., hepatic cancer, cervical cancer), seasonal disease burden (e.g., influenza) and immunization, and maintaining and improving functions (e.g., cognition, rehabilitation, vision, and hearing health) to develop evidence that vaccines play a prominent role in improving and maintaining the health and well-being of older adults.  
  • Estimate the reduction in long-term healthcare costs resulting from the prevention of VPDs, their complications, and associated long-term disabilities.  
  • Implement a longitudinal cohort study to assess the impact of vaccination on quality of life (as measured in quality-adjusted life years) among vaccinated older persons vs. non-vaccinated. |
Table 8. Examples of activities that VACCINATORS within the National Immunization Program can implement to integrate immunization activities for OLDER ADULTS into the primary care system within the framework of a life course approach.

<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Stewardship and advocacy           | **PRIORITY**  
- Disseminate scientific evidence to older adults on the benefits of vaccination, especially when considering the number and type of their comorbidities or chronic diseases.  
**ADDITIONAL**  
- Disseminate scientific evidence to older persons that vaccines can prevent infection transmission from caregivers, family members, other residents in hospital or long-term care facilities.  
- Share information on the benefits of immunization across the life course, especially when the person meets the definition of older adult in the country (e.g., discussing with patients, handouts outlining the benefits and requirements for vaccination).  
- Use appropriate language and avoiding infantile or patronizing patterns of communication.  
  - Resource: WHO Global report on ageism |
| Equity                             | **PRIORITY**  
- Organize outreach/mobile vaccination teams to reach older persons who are at very high risk of infection because of their comorbidities and/or living conditions.  
**ADDITIONAL**  
- Offer hearing screening (social communication and understanding) to older adults to ensure that information about immunization across the life course and other essential health services is appropriately understood.  
- Develop clear options for older persons who will not/cannot receive one or more vaccines. |
| Human resources and financing       | **PRIORITY**  
- Develop the yearly budget to include vaccine doses and materials for 100% of older adults in the catchment area.  
**ADDITIONAL**  
- Develop a costed operational plan to ensure the planning and implementation of vaccination services for all older adults and their caregivers. |
| Organization and service delivery   | **PRIORITY**  
- Have a list of all vaccine doses recommended for older adults by the Ministry of Health and place it somewhere visible inside the vaccination site.  
- Ensure that missing vaccine doses are offered to older persons at every encounter with the healthcare system.  
- Ensure that the time and place of vaccination services meet the needs of older adults in a specific area.  
**ADDITIONAL**  
- Refer older persons to additional essential health or social services for this age group, where needed (i.e., distribution of long-lasting insecticidal nets, seasonal malaria chemoprevention, deworming, HIV services, hygiene kit distribution, and health counseling).  
- Make sure that all older persons who come into contact with essential health services for any reason are screened for any missing vaccine doses.  
- Work with colleagues in hospitals, rehabilitation centers, and long-term residential homes to offer vaccination to older persons once they access these services.  
- Develop reminder and recall system to assist with completion of additional primary series and booster doses.  
- Organize vaccination sessions for older persons (and their families/caregivers) through community-based outreach sites (e.g., pharmacy sites, places of worship).  
- Set up additional vaccination sessions during the influenza season and in emergency situations.  
- Offer vaccination services through mobile teams (e.g., house-to-house, including long-term care facilities).  
- Offer vaccine doses to close contacts of older persons (such as caregivers) that may be at increased risk of VPDs.  
- Set up vaccination sessions through community-based outreach sites (e.g., pharmacy sites, places of worship, community and daycare centers, weekly markets, workplaces, banks, supermarkets, older people associations). |
<table>
<thead>
<tr>
<th>Component</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Demand generation and community engagement** | **PRIORITY**  
- Promote vaccines as part of the healthy aging process, rather than focusing exclusively on disease prevention.  
- Address questions and concerns that older persons and their families/caregivers have on vaccines and vaccination.  
- Collect feedback from older community members, their caregivers, and healthcare and well-being professionals to improve service delivery.  

**ADDITIONAL**  
- Offer information sessions for older persons on the benefits and administration of vaccines at the start of each influenza season or at the start of a VPD outbreak or emergency.  
- Offer information for older persons and their families on recommended vaccines before entering a long-term care facility.  
- Engage community partners to disseminate information, identify where and how to target older adults, help link older adults with vaccination services, and provide transportation to vaccination sites.  
- Hold discussions with older adults, their families/caregivers, and service providers (e.g., community centers, noncommunicable disease clinics, physiotherapy clinics, pharmacy sites, community and daycare centers, workplaces, older people associations, social workers) to improve the availability and uptake of vaccines for older persons.  
- Use knowledge and educational resources on how to discuss vaccines and vaccination services with older adults to reduce any hesitancy. |
| **Information systems**                       | **PRIORITY**  
- Estimate the number of older adults (aged 60 years or older) in the catchment area. Include official and nonofficial residents.  
- Promote the use and retention of HBRs for all vaccinated older persons to ensure they know their vaccination status.  

**ADDITIONAL**  
- Record and monitor vaccine uptake for each older person upon becoming a hospital inpatient, entering long-term healthcare, transferring to a different area, and moving to the subsequent age group.  
- Update the electronic immunization registry of each older adult after each vaccine dose administered so that there is a record of the individual’s vaccination status.  
- Collect data through surveys, interviews, community meetings or focus groups for older persons to gather preferences on vaccine strategy and sites. |
| **Training**                                  | **PRIORITY**  
- Explicitly address the importance of vaccination with all older adults. Counseling should focus on the effectiveness and safety of vaccination for this population group.  

**ADDITIONAL**  
- Take training/refresher sessions on new vaccines and vaccination practices on a regular basis.  
- Offer training sessions for vaccinators who work in locations that serve older persons (e.g., community centers, noncommunicable disease clinics, long-term care, physiotherapy clinics, pharmacy sites, community and daycare centers, workplaces, older people associations). |
This publication is an Appendix to the technical document “Building better immunity: A life course approach to healthy longevity”, with the contributions of several subject matter experts within and outside the Pan American Health Organization (PAHO). This Appendix provides examples of activities within the national immunization program that can improve coverage rates and reduce missed opportunities for four population groups: pregnant women, adolescents, healthcare workers, and older adults. These examples translate the principles and concepts of the Life Course Approach into concrete activities, which can be used by managers of National Immunization Programs and by vaccinators, respectively, to bolster vaccination coverage rates. These four groups represent life stages for which highly effective vaccines exist and that can greatly influence their health capacities. The application of primary series, booster, and catch-up vaccine doses in these groups are critical to close emerging immunity gaps. The activities are grouped into eight components: (i) stewardship and advocacy, (ii) equity, (iii) human resources and financing, (iv) organization and service delivery, (v) demand generation and community engagement, (vi) information systems, (vii) training, and (viii) evaluation and research. The examples should be assessed, customized, implemented and possibly expanded by Member States to align with the national and local contexts. This document is part of PAHO’s efforts to promote the application of a life course approach to immunization by the countries and territories of the Americas and to support Ministries of Health establish public health strategies at the subnational and local levels to safeguard the health and well-being of individuals of all ages.