

TAG RECOMMENDATIONS FOR YELLOW FEVER

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Pan-American Health Organization (PAHO), 2015

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1999 Recommendations

- Yellow fever endemic countries must achieve 100% vaccination coverage in enzootic yellow fever zones, as well as in contiguous areas infested with *A. aegypti*. These steps will provide protection to those persons exposed to the sylvatic cycle and will help prevent the introduction of the disease to urban settings.
- Given that it is difficult to predict demographic movements, countries with high migrant movements from non-enzootic to enzootic areas should consider national mass vaccination campaigns to immunize the entire population. Brazil is planning to conduct such a campaign.
- Yellow fever vaccination is also recommended for all travelers entering enzootic areas.
- In order to maintain high levels of population immunity to yellow fever, countries at risk should incorporate yellow fever vaccine into routine childhood vaccination schedules. Yellow fever vaccine should be given, as a separate injection, when measles vaccine is administered.
- Yellow fever surveillance must be strengthened. Timely yellow fever surveillance will allow the rapid implementation of control activities when an outbreak is detected. All suspected cases meeting the WHO surveillance case definition and those with icteric syndrome, in whom other infectious etiologies have been ruled out, should be investigated.
- Countries should prepare emergency rapid response guidelines to be used in the event of a yellow fever outbreak.
- Adequate planning of vaccine supply for routine vaccination and outbreak control is critical. A stockpile of vaccine should be available at all times.
- The implementation of a comprehensive vector control and surveillance program will keep the density of *A. aegypti* low in urban environments. This approach will also help to prevent dengue outbreaks.

2000 Recommendations

1. Yellow fever endemic countries must achieve 100% vaccination coverage in enzootic yellow fever zones. Yellow fever vaccination is necessary for all travelers entering enzootic areas.
2. Yellow fever surveillance must be strengthened. Timely yellow fever surveillance will allow the rapid implementation of control activities when an outbreak is detected.
3. Countries should prepare emergency rapid response guidelines to be used in the event of a yellow fever outbreak.
4. Adequate planning of vaccine supply for routine vaccination and outbreak control is critical. Vaccine should be available at all times to deal with emergencies.
5. The implementation of a comprehensive vector control and surveillance program will keep the density of *A. aegypti* low in urban environments. This approach will also help to prevent dengue outbreaks.

2002 Recommendations

- Countries should continue strengthening surveillance of clinical cases compatible with yellow fever, to ensure the expeditious implementation of control measures. Icteric syndrome and epizootic surveillance should be carried out in a systematic way in sentinel areas to enhance the capacity of countries to detect yellow fever virus circulation.
- Enzootic countries should consider the implementation of the following recommendations in municipalities within enzootic areas, or in areas with a level of house infestation index by *A. aegypti* greater than 5%:
 - Immunize the entire population.
 - Incorporate yellow fever vaccine in the routine schedule for children.
- Provision should be made by the Americas to stockpile sufficient vaccine for use in emergency outbreak control efforts.

2004 Recommendations

- Countries with enzootic areas should view yellow fever as a public health priority, providing political, technical, and financial support for the implementation of national plans for yellow fever prevention and control.
- Epidemiological surveillance of yellow fever virus circulation should be strengthened both in enzootic and non-enzootic areas to allow rapid implementation of outbreak control measures when a human case or an epizootic is detected.
- To enhance the early detection of yellow fever virus circulation, the implementation of epizootic and febrile icteric syndrome surveillance in both enzootic and non-enzootic areas is advised.
- The yellow fever vaccination plan should target 100% of the population residing in enzootic areas and areas that are the source of migration into enzootic areas. Yellow fever coverage in these areas should be maintained at >95% among children aged 1 year, as should measles coverage.
- The maintenance of low infestation rates of *Aedes aegypti* is important, not only to prevent the reurbanization of yellow fever, but also to avoid extensive outbreaks caused by the dengue virus.
- An adequate yellow fever vaccine stock should be maintained both for the regular program and campaigns, with reserves for control of possible outbreaks.
- Epidemiological monitoring of adverse events attributable to the yellow fever vaccine should be strengthened.

2006 Recommendations

- Countries with enzootic areas should consider yellow fever a public health priority, gathering all the political, technical, and financial support to continue with implementation of national plans for yellow fever prevention and control.
- It is essential to complete vaccination of all the population residing in enzootic areas and in communities where immigration to enzootic areas originates. The strengthening of the information system and analysis is crucial to evaluate and monitor the plans in order to focus vaccination in municipalities or areas with low vaccination coverage.
- The three remaining countries that did not do so, should include yellow fever vaccine in their national schedule so the vaccine is administered at the same time as MMR to children reaching one year of age.
- Countries should continue to improve the quality and sensitivity of the epidemiological surveillance for yellow fever. In non-enzootic areas, outbreak control measures should be strengthened and include increasing the sensitivity of the surveillance system, improving the capacity for adequate outbreak response, maintaining a vaccine supply at national level, and conducting vector control to avoid re-urbanization of the disease.

2009 Recommendations

- Countries with enzootic areas should consider completing their plans for yellow fever control vaccinating all residents in these areas aged >1 year. Travelers to these enzootic areas should also be vaccinated.
- Countries should assess vaccination coverage through rapid monitoring or other methodologies to ensure that the entire population living in risk areas is vaccinated.
- The four remaining countries with enzootic areas that have not yet introduced the yellow fever vaccine in their routine program should target children aged one year in order to have protected cohorts in the long term. Vaccination coverage should be maintained at over 95% in routine vaccination programs for the first year of life.
- Epidemiological information and careful yellow fever risk assessment, considering ecological, environmental, and cultural factors that favor disease transmission, should guide vaccination activities. Therefore it is important that countries maintain and improve their epidemiological surveillance systems.
- Countries should ensure the quality and sensitivity of the epidemiological surveillance system for yellow fever, including surveillance of icterohaemorrhagic febrile illnesses, epizootics, vaccination coverage, and adverse events associated with yellow fever vaccination. In non-enzootic areas of these countries, the sensitivity of the surveillance system should be increased and outbreak control measures strengthened. It is recommended that countries have a national stock of vaccines.
- In light of outbreaks in Brazil, Paraguay, and Argentina in 2008, Regional and Global Emergency vaccine supplies were consumed in their entirety in January and February 2008. Given the limited availability of yellow fever vaccines, priority should be given to primary vaccination and re-vaccination should be avoided.
- Given the current risk of the reurbanization of yellow fever in the Region, a comprehensive approach should be adopted that highlights vector control of *Aedes aegypti* in urban centers bordering enzootic areas. Elimination of breeding sites should be undertaken and, insofar as possible, environmental conditions should be improved so that they don't foster mosquito reproduction.
- Countries should have a risk communication plan in order to avoid crisis situations due to yellow fever outbreaks and ESAVIs related to the vaccine.
- Countries should consider adequate screening mechanisms to identify vaccine contraindications and precautions before vaccination.

2013 Recommendations

- TAG endorses the recommendations issued by SAGE:
 - One yellow fever vaccine dose is sufficient to provide sustained immunity and life-long protection against the disease, therefore no booster is required.
 - In regards to special populations, immunocompromising conditions including symptomatic HIV or CD4+ counts < 200 cells/mm³ are contraindications to vaccination while age ≥60 years, pregnancy, and breastfeeding are precautions to vaccination. A risk-benefit analysis is recommended for individuals with a precaution to vaccination.
 - The recommendation for the simultaneous administration of MMR and yellow fever is maintained, given that to date there is no sufficient evidence to change current recommendations.
- TAG calls for further studies to better understand the potential need for boosters in special groups, as well as the simultaneous administration of yellow fever and other live vaccines such as MMR in children. Also, additional studies are needed on the immunogenicity and safety of yellow fever vaccine in persons aged >60 years, HIV-infected adults and children, and pregnant and breastfeeding women.
- TAG reemphasizes the importance of yellow fever vaccination through the routine immunization program and of maintaining high coverage levels in order to prevent cases and outbreaks of the disease.
- PAHO should work towards addressing the long-standing issue of insufficient yellow fever vaccine supply in the Region through technology transfers and other mechanisms. Similarly, TAG strongly urges PAHO, WHO, partners, and vaccine manufacturers to develop a strategy to increase the global production capacity for yellow fever vaccine.