

Asia and the Pacific MCV 5-dose

This document provides a landscape of 5-dose vial measles-containing vaccine (MCV) use in Southeast Asia and the Western Pacific.

- The 13th meeting of Southeast Asia’s Regional Immunization Technical Advisory Group (RITAG), held in August 2022, recommended that “countries that are yet to switch from 10-dose to 5-dose measles-rubella (MR) vials review the local context related to suggested indicators and plan for switching to enhance coverage and reduce wastage. Sensitization will be required for healthcare workers (HCWs) around the 5-dose vial prior to the switching.” In issuing this recommendation, the Southeast Asia Region (SEAR) RITAG now joins Africa’s RITAG, which made a similar recommendation in 2020
- As of November 2022, only three out of 11 countries in SEAR are still using 10-dose vials, and one more country (Nepal) is expected to switch to 5-dose vials in 2023
- In the Western Pacific Region, most countries are using MCV 5-dose vials or smaller for routine immunization (RI)

INDIA

India first started using measles monovalent (M) 5-dose vials in 1994 in selected districts to improve coverage and reduce wastage. By 1999, 5-dose vials were used for all RI across the country, and India continued to order 5-dose vials when the MR vaccine was introduced into RI beginning in 2016. After nearly three decades of using 5-dose MCV vials, India has seen the following:

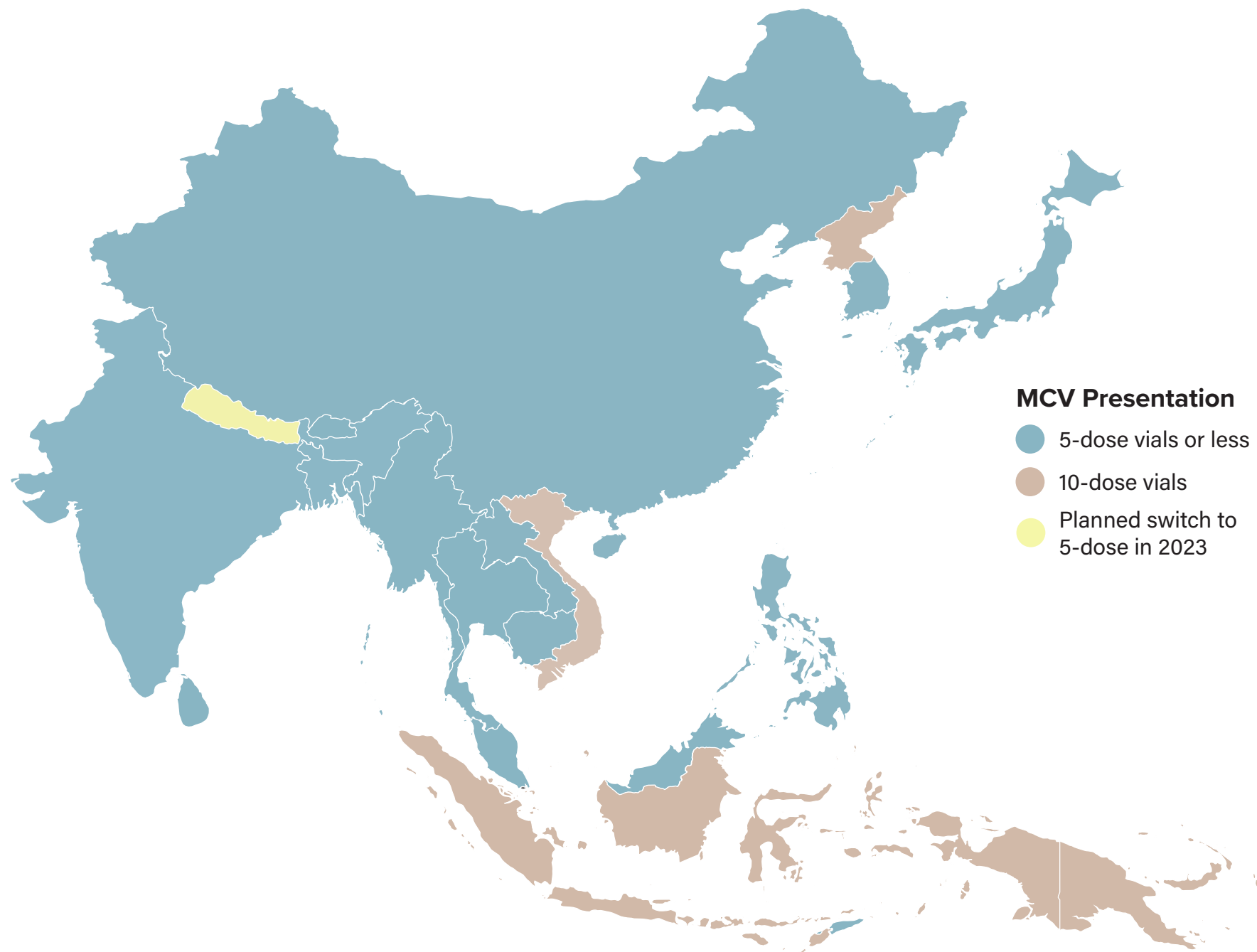
- In 2019, coverage reached 95% for MCV1 and 84% for MCV2
- A 2019 vaccine wastage assessment calculated the average wastage rate for MR 5-dose to be 31% across 12 states and 24 districts, while a 2010 assessment calculated average wastage rates to be 35% (Gavi’s wastage assumption is 40% for 10-dose)
- The 2010 wastage assessment found that 86% of routine measles immunization sessions required five or fewer doses, while only 14% required more than five doses
- India hasn’t had any issues accommodating the cold chain volume requirements of 5-dose orders
- Immunization managers said HCWs “welcomed [5-dose vials] with open arms” because it reduced the risk of wastage and made it easier to open a vaccine for a smaller number of children
- In 2023, West Bengal (India’s fourth most populous state) will use 5-dose vials for its MR campaign

BANGLADESH

Based on a recommendation from WHO’s SEAR office, ministry of health (MoH) representatives in Bangladesh (including the EPI manager) held a virtual meeting with WHO country office technical officers and UNICEF in May 2021, where they decided to introduce 5-dose MR vials beginning in 2022 “given the programmatic advantages and financial savings.” These assumptions and activities followed:

- Switching from MR 10-dose to 5-dose was associated with a calculated savings of US \$1.5 million
- Wastage rates are expected to decrease from 45% with 10-dose vials to 20% with 5-dose vials
- In March 2022, Bangladesh initiated its first procurement of 5-dose vials, which reached the country in April
- The decision was endorsed by the Directorate General of Health Services, which sent a letter to field officers to announce the change
- HCWs were directed to finish the existing 10-dose stock first, and then to use 5-dose vials only for RI going forward

NOVEMBER 2022



BHUTAN

Bhutan started using the measles, mumps, and rubella (MMR) vaccine in 5-dose vials for RI after national campaigns introduced it in 2016, aiming to reduce wastage associated with 10-dose vials and reach immunization coverage above 95% “despite the geographical challenges.” In-country experts reported these results:

- Since Bhutan is a small country with rugged terrain and scattered populations, session sizes are typically small and HCWs may turn small groups of children away (telling them to come back another time) rather than open 10-dose vials, especially in outreach clinics
- The switch to MMR led to a 15%-20% reduction in wastage; for example, average wastage for MR 10-dose was 67% in 2015, while wastage for MMR 5-dose was 50% in 2021 (a 17% decrease)
- The per-vial price of MMR 5-dose is less than MMR 10-dose, so the switch was cost-saving with wastage factored in, even though some incremental costs increased (e.g., transportation)
- Bhutan had enough existing cold chain storage capacity to accommodate the 5-dose vials
- The switch was initiated by the MoH, then communicated to the National Immunization Technical Advisory Group (NITAG), and then shared with HCWs in a letter to district offices
- Coverage increased after the switch and HCWs reported being more likely to open an MCV vial even for just one to two children

MYANMAR

Myanmar transitioned to MR 5-dose vials for RI nationwide in July 2020 with the primary goals of reducing vaccine wastage and increasing coverage. Country immunization experts reported the following:

- The average wastage assumption rate for MR 10-dose (used for vaccine forecasting) was estimated as 45%—though actual wastage rates are likely higher, especially in hard-to-reach, rural, and sparsely populated regions
- The price-per-vial for MR 5-dose is approximately US\$4.10, compared with US\$6.46 for MR 10-dose
- Despite a slight increase in cold chain volume requirements, there was “no critical challenge in cold chain capacity experienced” from switching to 5-dose
- NITAG submitted the “evidence-based decision” to switch to 5-dose to the Inter-Agency Coordination Committee (ICC), which endorsed it
- A vaccine wastage study was planned for 2020 but delayed; the success of the switch, including its effect on reducing wastage and improving coverage, has yet to be evaluated

LAO PDR

Laos switched to MR 5-dose vials for RI in 2020 to improve coverage and reduce missed opportunities for vaccination due to HCW hesitancy to open 10-dose vials. EPI experts shared the following:

- In 2017, MR coverage was 86% according to WHO and UNICEF estimates of national immunization coverage (WUENIC); MoH expects the switch to 5-dose to help increase coverage to 95%
- HCWs regularly did not open 10-dose vials if fewer than three to five children were present; to reduce vaccine wastage, many immunization centers only gave MCVs once per week or month
- In an instructional document given to HCWs to introduce the switch, the wastage factor for MR 10-dose was 2.0 (50% wastage rate), whereas the wastage factor for MR 5-dose was 1.18 (15% wastage rate)
- In 2020, the wastage-adjusted vaccine price per fully immunized child was estimated as US\$2.05 for 5-dose compared with US\$2.19 for 10-dose
- The ICC and NITAG were involved in the decision-making process and helped to circulate information to provinces about the presentation change
- The switch resulted in increases in cold chain volume requirements, the number of reconstituted syringes, and transportation costs