The Costs of Preparation and Delivery of Td Vaccine to 7-Year-Old Children in Vietnam

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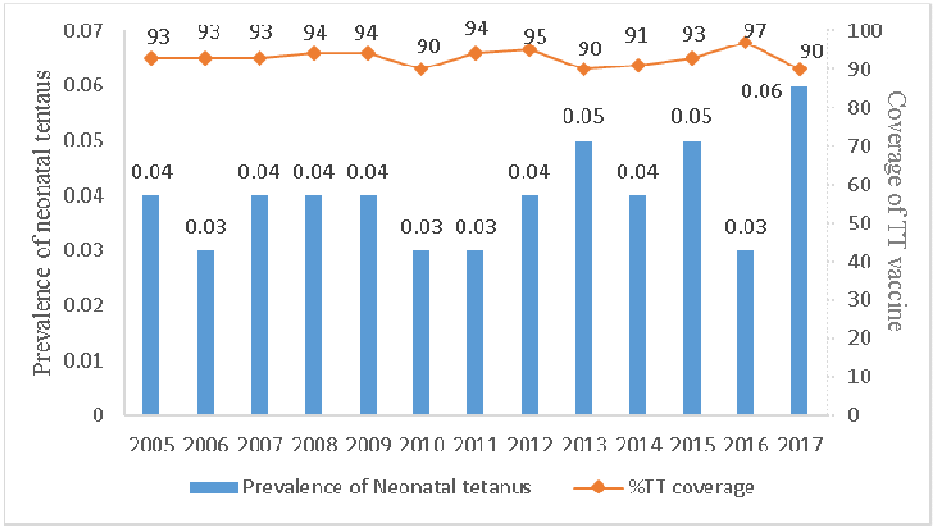
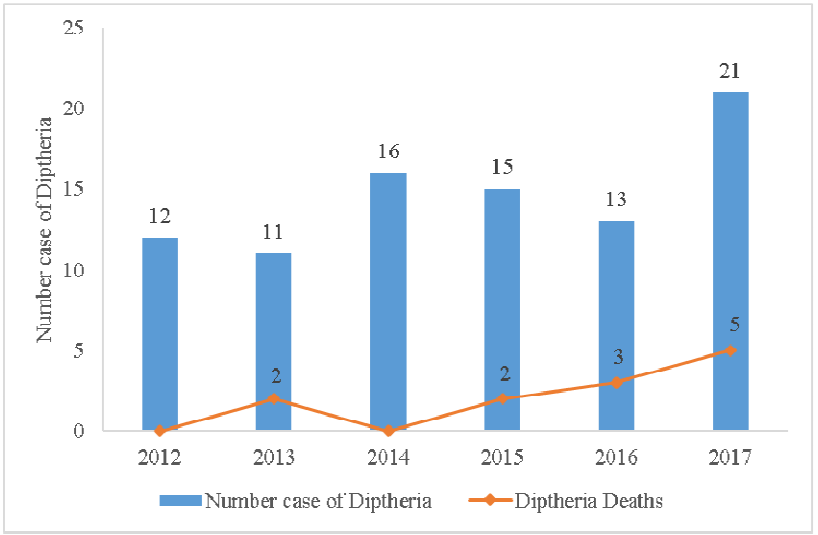
PROGRAMMATIC OR POLICY ISSUE

Maternal and neonatal tetanus have been eliminated and maintained.



Diphtheria outbreaks have occurred more frequently.



Vietnam is planning to follow WHO recommendations to replace *TT vaccine* *for Women of Child-Bearing Age (WCBA) and* *Td vaccine* *for outbreak control* **WITH** *Td vaccine* *for all 7-year-old children*. **Cost evidence is required.**

CURRENT AND PROPOSED SCHEDULE FOR TT AND Td VACCINATION

	The current schedule (for 2017)		
	TT vaccine		Td vaccine
Target group	Pregnant women	Women of childbearing age (WCBA)	5-40-year-old people
Coverage	All pregnant women	WCBA from high-risk areas	People in outbreak affected areas
Delivery strategy	Facility-based and outreach	Facility-based, outbreak and school-based	Campaign

	The proposed replacement plan		
	TT vaccine		Td vaccine
Target group	Pregnant women	WCBA	7-year-old children
Coverage	All pregnant women	WCBA from high-risk areas	Children from all 63 provinces
Delivery strategy	Same as the current schedule	Complete cessation	Scenario 1: Facility-based Scenario 2: Facility-based and outreach Scenario 3: School-based

STAKEHOLDER ENGAGEMENT

- HUPH consulted NEPI at start to identify cost needs, define research question, co-develop research protocol
- Early socialization with WHO
- Engagement of NEPI manager and staff, MoH budget rep, other MoH staff in ICAN cross-country workshops to discuss methods and interpret findings
- HUPH engagement of NEPI periodically, especially to solicit inputs on prospective costing
- NEPI has formally disseminated results subnationally in meetings about the cessation of TT and replacement with Td
- Cost data already being used to plan introduction pilots in 2019

RESEARCH QUESTIONS

1. What are the costs of delivery of TT vaccine to women of childbearing age (WCBA) in Vietnam?

2. What are the costs of Td campaign vaccination for diphtheria outbreak control?

3. What are the one-time costs associated with introduction of Td for 7-year-olds (projected new vaccine introduction costs and incremental costs)?

4. What are the costs of delivery of Td vaccine to 7-year-old children in Vietnam?

IS THE SWITCH COST SAVING?

METHODOLOGY

- **Ingredients-based costing from a public health care provider perspective to estimate the budget impact:**
  - Retrospective costing:
    - To estimate the delivery cost of TT for WCBA in 2017
    - To estimate the delivery cost of Td for diphtheria outbreak control through campaigns in 2017
  - Prospective costing of the replacement (2018-2025):
    - Complete cessation of TT vaccination for WCBA
    - Routine implementation of Td vaccination for 7-year-old-children
      - Three possible delivery strategies: (1) health facilities, (2) combination facilities and outreach sites; and (3) schools
    - A 3-year-transition period where Td outbreak control campaigns still occur

CALCULATION OF COST SAVINGS AND BUDGET IMPACT

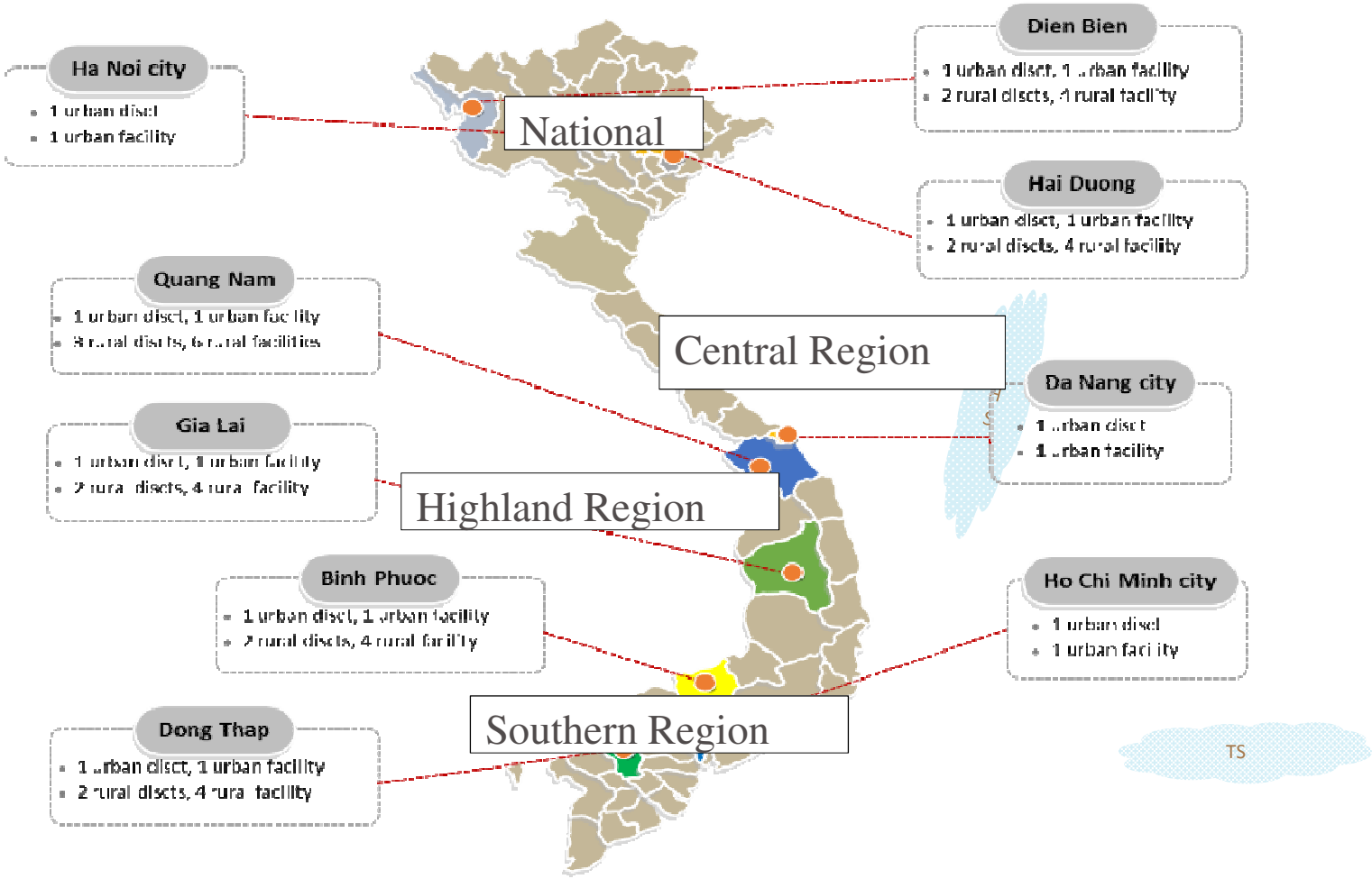
- Savings = A – (B + C), where
  - A = the current schedule: TT for WCBA and Td for outbreaks
  - B = the new schedule: Td for 7-year-old children
  - C = transitional period (2018-2020), assuming 50% of covered population in 2017 Td campaign

	2018	2019	2020	2021	2022	2023	2024	2025
NO replacement[1]								
- TT for CBAW	100%	100%	100%	100%	100%	100%	100%	100%
- Td campaigns	100%	100%	100%	100%	100%	100%	100%	100%
Replacement[2]								
- Td for 7y children	70%	90%	100%	100%	100%	100%	100%	100%
- Transitional for Td campaigns	50%	50%	50%					

Notes:
[1] Empirical study (EPI 2017); [2] NEPI experts estimations

STUDY SAMPLE

Total 73 sites: national level (1), regional (3), provincial (9), urban (10) and rural (13) districts, and urban (11) and rural (26) facilities.



FINDINGS: NOTES

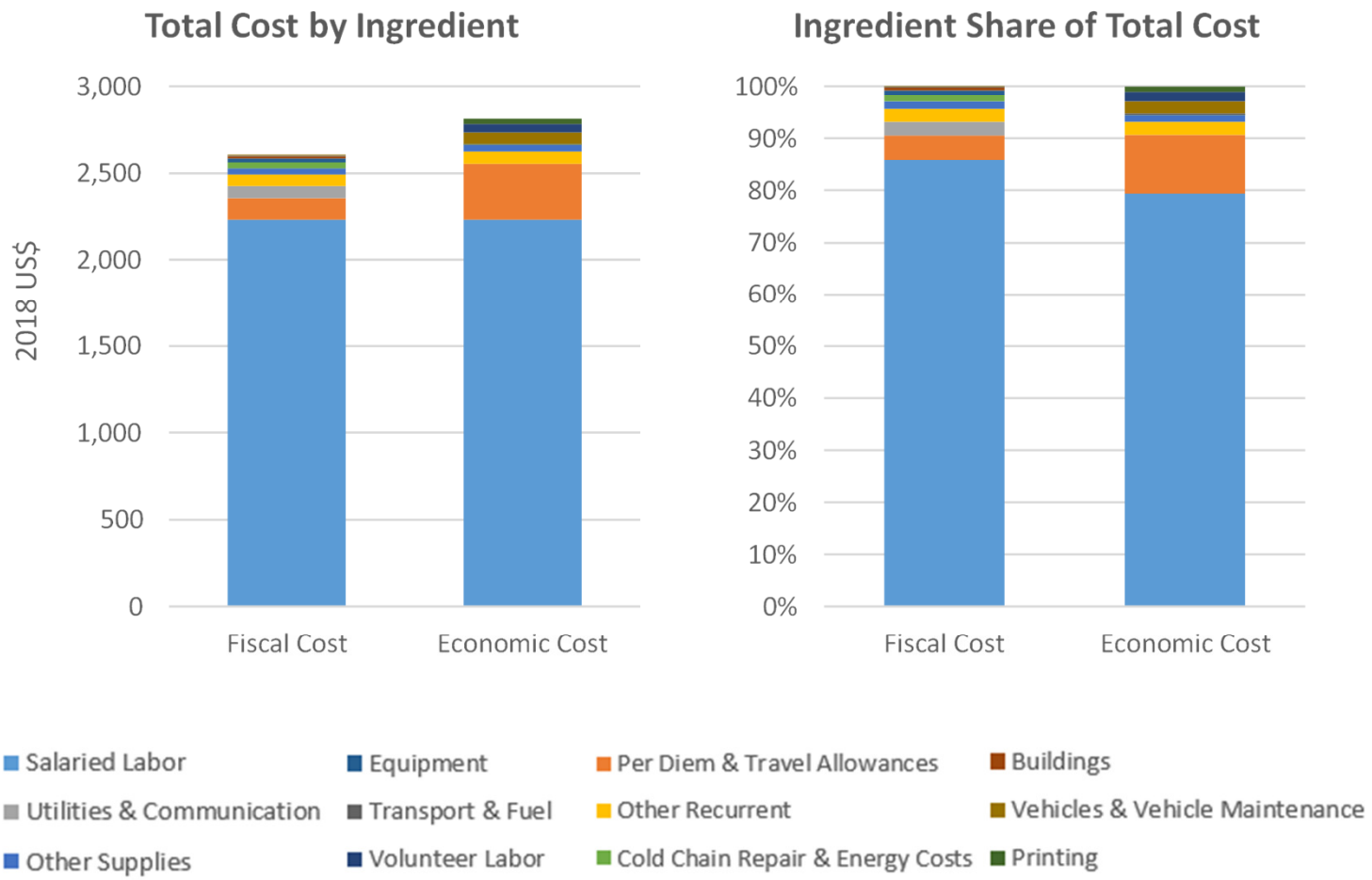
- All averages presented on the pages that follow are **volume-weighted averages**, not simple averages.
  - A weighted average takes total output into account. The sum of total costs is divided by total output (either doses or fully immunized children), as opposed to calculating simple averages.
- Costs presented are **immunization delivery costs** which exclude vaccine costs and immunization supplies costs.
- All findings are fiscal costs, unless otherwise noted.
  - Fiscal costs represent actual spending in 2017; economic costs include actual time spent and MOF regulations for payment of per diems and travel (accommodation and transport), with annualized capital costs included.
  - Economic cost results are available in the study report.
- All findings are presented in **2018 U.S. dollars (US$)**.

COSTS OF THE CURRENT SCHEDULE: TT FOR WCBA AND Td FOR CAMPAIGN IN 2017

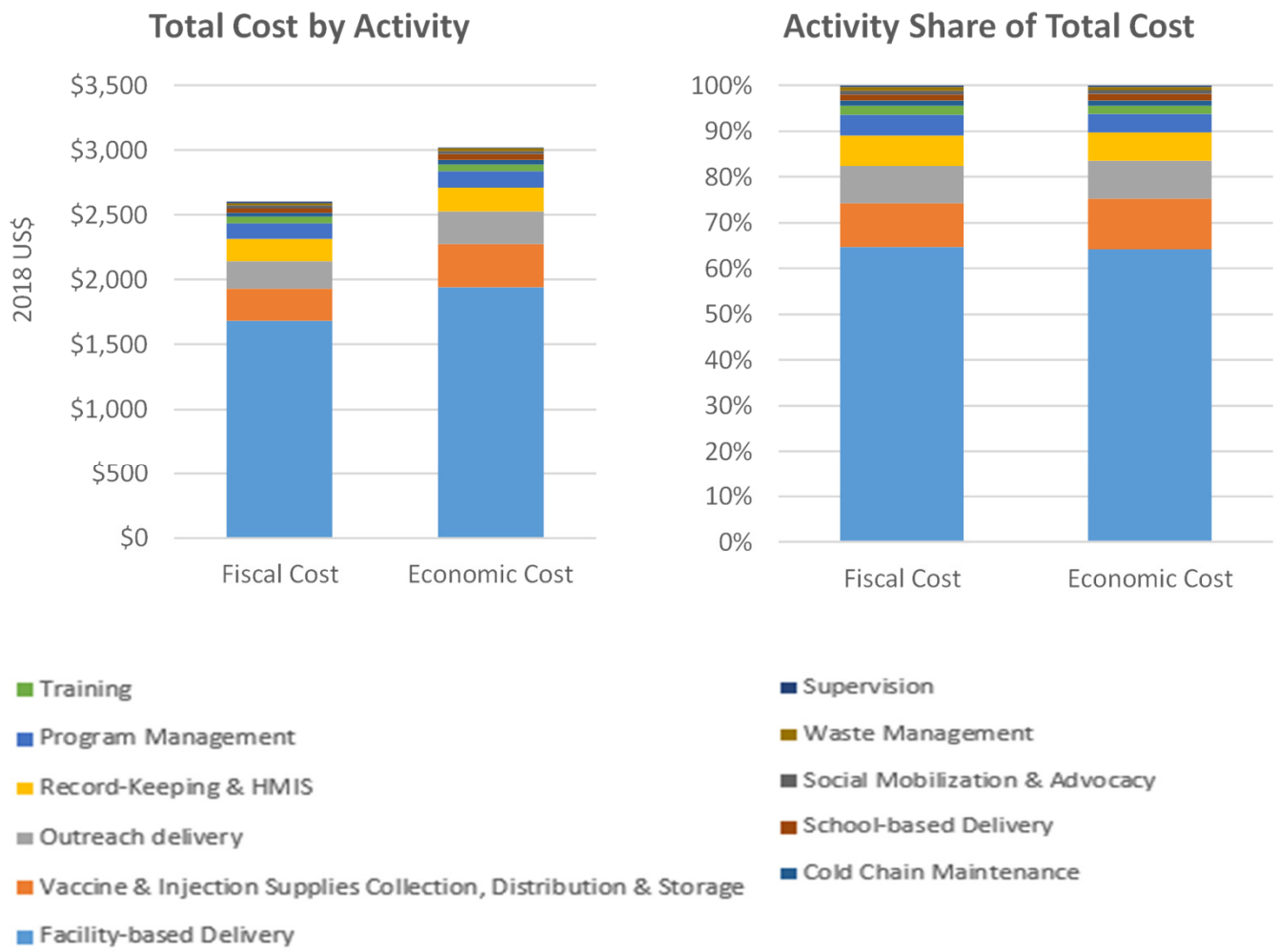
Current Strategies	Total doses		Average unit cost per dose (2018 US$)	Average total cost (2018 US$)
TT vaccination for WCBA	1,100,000	%		$2,071,366
Facility-based delivery	305,723	27.8%	$1.80	$550,302
Multiple strategies (Facility-based and outreach)	137,354	12.5%	$3.90	$535,680
School-based delivery	656,923	59.7%	$1.50	$958,384
Td vaccination through campaigns	82,603		$3.50	$289,111

Notes:
Costs are presented in USD and were inflated to 2018 prices.
Total TT doses for WCBA from all 11,626 facilities across the country.
The cost per dose is the same for all routine vaccines in the current EPI.

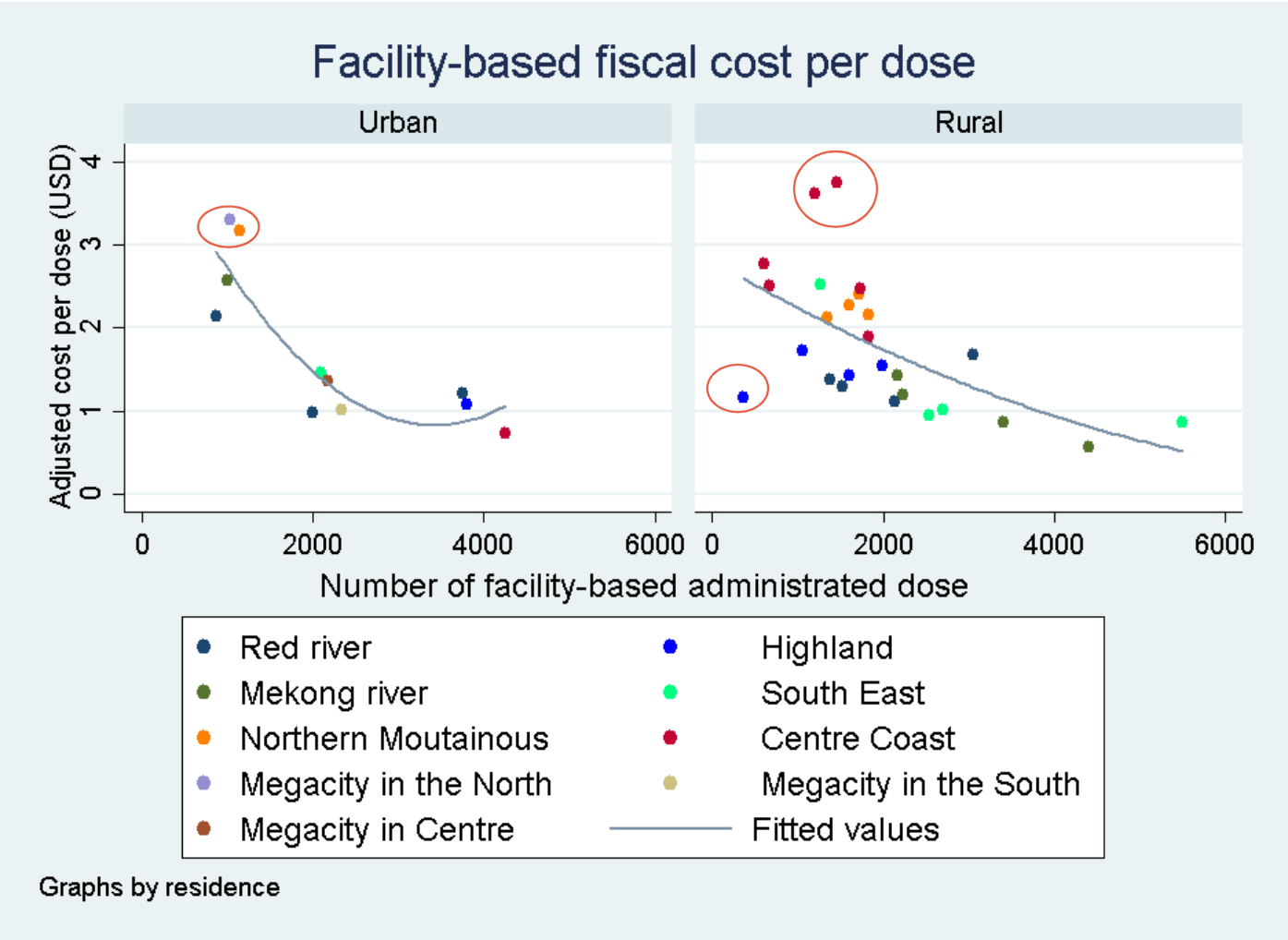
TOTAL COST BY INGREDIENT AT THE FACILITY LEVEL



TOTAL COST BY ACTIVITY AT THE FACILITY LEVEL

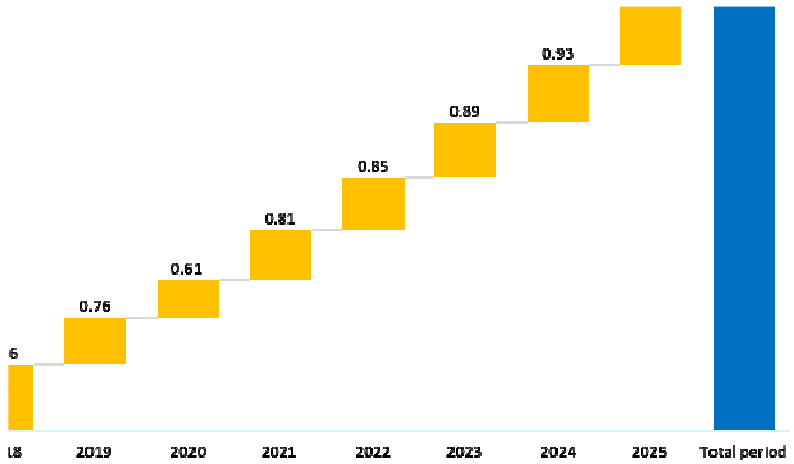


FACILITY-BASED FISCAL COST PER DOSE BY GEOGRAPHIC AREAS



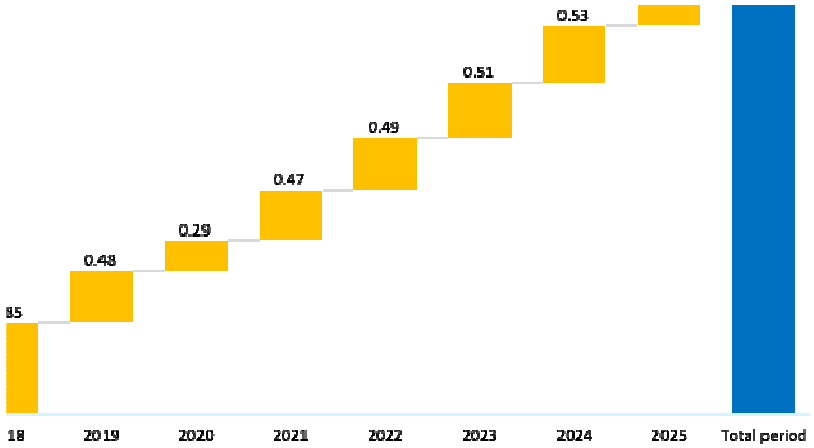
FISCAL COST SAVING FROM REPLACEMENT PLAN 1

The new schedule: Td for 7-year-old children via **school-based** delivery strategy



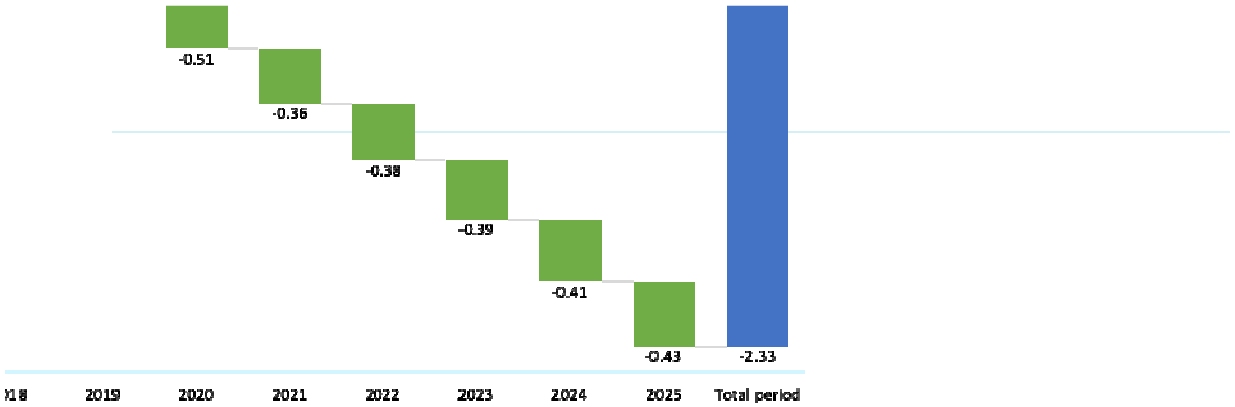
FISCAL COST SAVING FROM REPLACEMENT PLAN 2

The new schedule: Td for 7-year-old children via **facility-based** delivery strategy

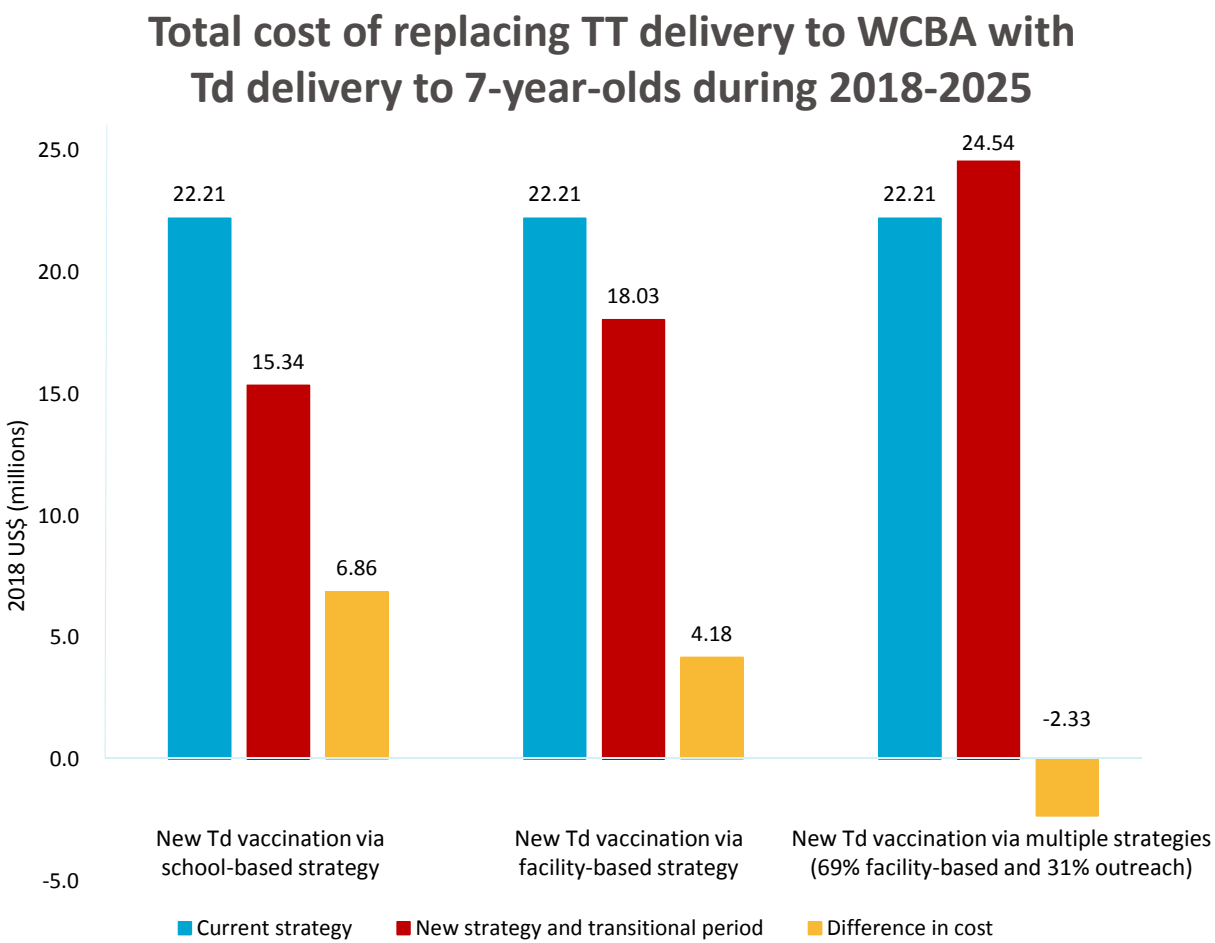


FISCAL COST SAVING FROM REPLACEMENT PLAN 3

The new schedule: Td for 7-year-old children via **multiple delivery strategies**
(69% facility-based and 31% outreach based)



BUDGET IMPACT



OPPORTUNITIES FOR USE

- **NITAG decision about cessation of TT delivery and introduction of Td delivery to 7-year-old children**
  - Piloting underway
- **5-year plan/budget (2021-2025)**
- **Annual plan/budget**
- **Vaccine Introduction Plan**

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