**Appendices of "Estimating the delivery costs of COVID-19 vaccination using the COVID-19 Vaccine Introduction and deployment Costing (CVIC) tool: the Lao People's Democratic Republic experience"**

**Authors: Karene Hoi Ting YEUNG, Eunkyoung KIM, YAP Wei Aun, Chansay PATHAMMAVONG, Lauren FRANZEL, Yu Lee PARK, Peter COWLEY, Ulla Kou GRIFFITHS, Raymond Christiaan W. HUTUBESSY**
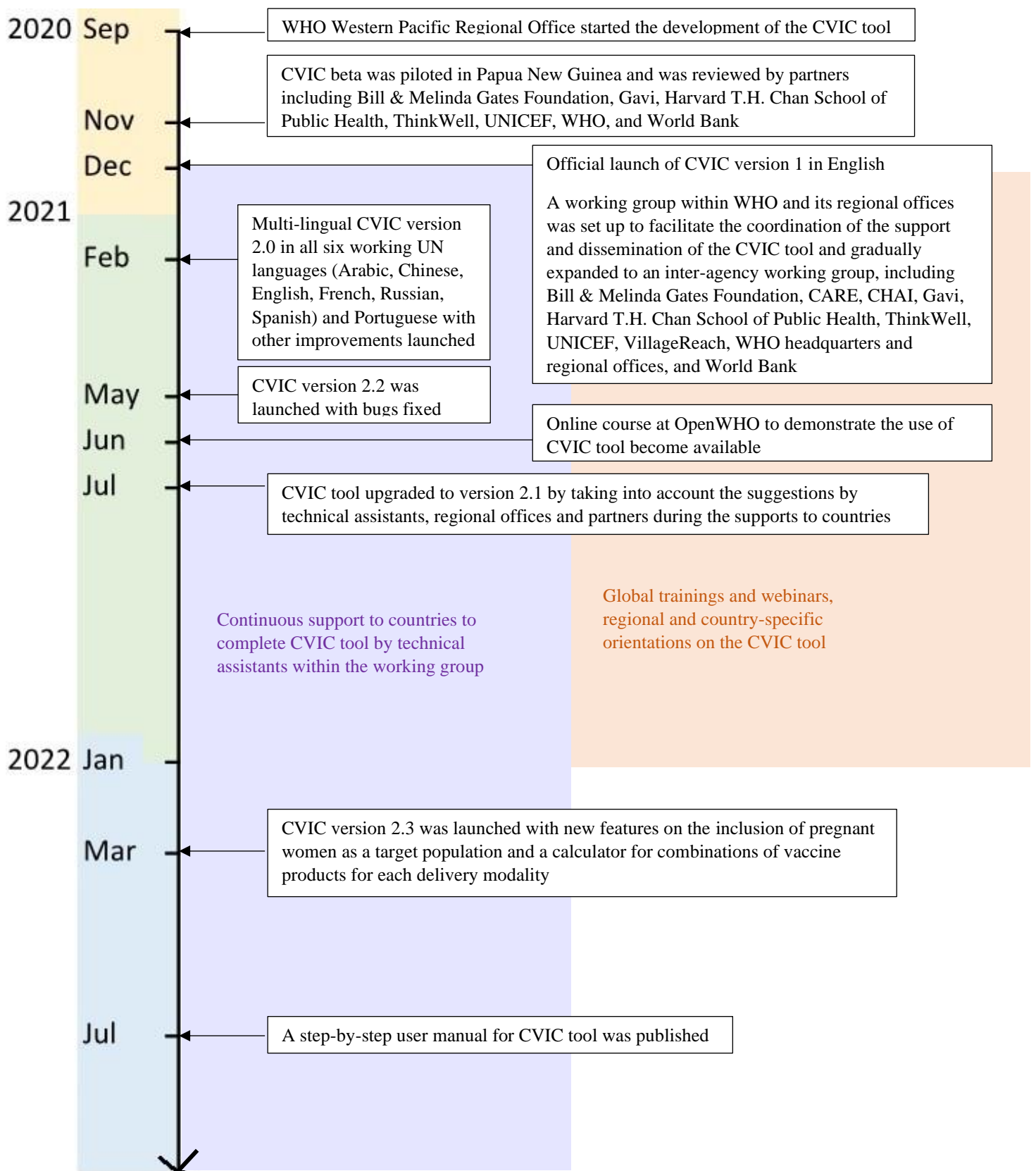
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**Appendix 1. Timeline for the development and key milestones of the COVID-19 Vaccine Introduction and deployment Costing (CVIC) tool**

**2020 Sep** — WHO Western Pacific Regional Office started the development of the CVIC tool

**Nov** — CVIC beta was piloted in Papua New Guinea and was reviewed by partners including Bill & Melinda Gates Foundation, Gavi, Harvard T.H. Chan School of Public Health, ThinkWell, UNICEF, WHO, and World Bank

**Dec** — Official launch of CVIC version 1 in English

A working group within WHO and its regional offices was set up to facilitate the coordination of the support and dissemination of the CVIC tool and gradually expanded to an inter-agency working group, including Bill & Melinda Gates Foundation, CARE, CHAI, Gavi, Harvard T.H. Chan School of Public Health, ThinkWell, UNICEF, VillageReach, WHO headquarters and regional offices, and World Bank

**2021**

**Feb** — Multi-lingual CVIC version 2.0 in all six working UN languages (Arabic, Chinese, English, French, Russian, Spanish) and Portuguese with other improvements launched

**May** — CVIC version 2.2 was launched with bugs fixed

**Jun** — Online course at OpenWHO to demonstrate the use of CVIC tool become available

**Jul** — CVIC tool upgraded to version 2.1 by taking into account the suggestions by technical assistants, regional offices and partners during the supports to countries

Continuous support to countries to complete CVIC tool by technical assistants within the working group

Global trainings and webinars, regional and country-specific orientations on the CVIC tool

**2022 Jan**

**Mar** — CVIC version 2.3 was launched with new features on the inclusion of pregnant women as a target population and a calculator for combinations of vaccine products for each delivery modality

**Jul** — A step-by-step user manual for CVIC tool was published

**Appendix 2. Prepopulated data and sources in the COVID-19 Vaccine Introduction and deployment Costing (CVIC) tool**

For user convenience and consistency, key parameters from global databases were compiled and included as overridable defaults in the CVIC tool.

| Data | Source |
|---|---|
| Covid-19 vaccine specifications | WHO https://www.who.int/tools/covid-19-vaccine-introduction-toolkit#vaccine%20specific%20resources |
| Country-level health financing data | WHO Global Health Expenditure Database - Preliminary Data for 2018 |
| Country-level population and demographic data | United Nations 2019 Revision of World Population Prospects; World Development Indicator (SP.POP.TOTL) for 2020 |
| Crude birth rate | World Development Indicator (SP.DYN.CBRT.IN) for 2018 |
| Gross monthly salaries for human resources for health | Serje, Juliana, Melanie Y. Bertram, Callum Brindley, and Jeremy A. Lauer. 2018. "Global Health Worker Salary Estimates: An Econometric Analysis of Global Earnings Data." Cost Effectiveness and Resource Allocation 16 (1): 10. https://doi.org/10.1186/s12962-018-0093-z . WHO-CHOICE. Updated to 2020. |
| Supply of human resources for health | WHO estimation of stock in 2020 based on latest reported health workforce stock in the National Health Workforce Accounts |
| Maximum redeployable human resources for health | Boniol M et al. Estimating the health workforce requirements and costing to reach 70% COVID-19 vaccination coverage by mid-2022: a modelling study and global estimates. BMJ Open 2022;12:e063059. doi: 10.1136/bmjopen-2022-063059) |
| Country context and other miscellaneous parameters<br><br>- Foreign currency exchange rates<br><br>- Country surface area<br><br>- WHO region<br>- World Bank income group, World Bank lending category, Pacific Island State status, Highly Indebted Poor Country status, and Fragile and Conflict Affected Situation status<br>- Membership of international bodies | <br><br><br>- FloatRates (aggregated from central banks) http://www.floatrates.com/daily/usd.xml<br>- World Development Indicator (AG.SRF.TOTL.K2) for 2018<br>- WHO<br>- World Bank<br><br><br><br><br><br>- Relevant body or initiative |
| Data sources which are used for user informational purposes but are not used as defaults in estimations:<br><br>- Health infrastructure<br><br>- Diabetes prevalence (% of population ages 20 to 79)<br>- Prevalence of prevalence of obesity among adults, BMI >= 30 (crude estimate) (%)<br>- Urbanization<br><br>- Household size | <br><br><br><br>- WHO Global Health Observatory (as of October 2020)<br>- World Development Indicator (SH.STA.DIAB.ZS) for 2019<br>- WHO Global Health Observatory (as of October 2020)<br><br>- World Development Indicator (SP.URB.TOTL.IN.ZS) for 2019<br>- United Nations, Department of Economic and Social Affairs, Population Division (2019). Database on Household Size and Composition 2019. https://population.un.org/Household/index.html |