

IMMUNIZATION DELIVERY COST CATALOGUE (IDCC) CODEBOOK AND DEFINITIONS

This document includes:

- Immunization Delivery Cost Catalogue (IDCC) Codebook, which includes a description of each variable in the IDCC and
- Definitions table, which may be useful for understanding the data presented in the IDCC.

IDCC CODEBOOK

Section	Column Name	Description
	Resource ID	Identification number assigned to each source document.
	Record ID	Identification number and/or number and letter (e.g. 52, 53, 10_a, 10_b, etc.) assigned to the data from the study extracted on this line. Each number represents a single study. Letters are attached to a number (e.g. 10_a, 10_b, etc.) when multiple lines of data from the study were extracted.
	Study description	Description of the study.
	Database row description	Description of the data in the database line.
BACKGROUND	Author	First author of the source document from which the data was extracted.
	Reference	Reference for the source document of the data extracted, which could be a peer-reviewed journal publication or a report.
	Year of publication	Year when the source document was published.
	Article, Report, or Project title	Title of the article, report or project described in the source document.
	Resource type	Whether the source document for the data extracted is a peer-reviewed journal article or is grey literature.
	Country	The country where the study was conducted.

	Region	The region (according to the World Bank classification) where the study was conducted.
	Country income level	The income level (according to the World Bank classification) of the country where the study was conducted, at the time of the study.
	Country population	The population of the country where the study was conducted, at the time of the study.
	Geographic setting	Whether the study was conducted in a rural or urban area (as defined by the authors of the study).
	Other contextual information	Any additional contextual factor that may impact immunization programs and their costs.
UNIT COSTS (2020 USD)	Cost per dose without vaccine (2022 USD)	Cost per single dose delivered without vaccine, in 2022 US\$.
	Cost per dose with vaccine (2022 USD)	Cost per single dose delivered with vaccine, in 2022 US\$.
	Cost per person in the target population without vaccine (2022 USD)	Cost per person in the target population without vaccine, in 2022 US\$.
	Cost per person in the target population with vaccine (2022 USD)	Cost per person in the target population with vaccine, in 2022 US\$.
	Number of persons in "cost per person in target population" calculation	Denominator value for the cost per person in the target population calculation.
	Cost per fully immunized person without vaccine (2020 USD)	Cost per fully immunized person without vaccine, in 2022 US\$.
	Cost per fully immunized person with vaccine (2020 USD)	Cost per fully immunized person with vaccine, in 2022 US\$.
	Definition of fully immunized person	How the article/report authors defined "fully immunized."

	Number of people included in fully immunized person calculation	Denominator value for the cost per fully immunized person calculation.
	Information on reported unit cost	Additional information on cost per person or reported unit cost
VACCINES	Entire EPI schedule?	Whether the study costed the entire EPI schedule.
	New vaccine introduction	Whether the cost is for a newly introduced vaccine and the cost includes new vaccine introduction costs.
	BCG	Whether the database line reports delivery costs for BCG vaccine.
	Measles	Whether the database line reports delivery costs for Measles vaccine.
	MR	Whether the database line reports delivery costs for MR vaccine.
	MMR	Whether the database line reports delivery costs for MMR vaccine.
	HepB	Whether the database line reports delivery costs for HepB vaccine.
	DTP	Whether the database line reports delivery costs for DTP vaccine.
	DTaP	Whether the database line reports delivery costs for DTaP vaccine.
	DTwP	Whether the database line reports delivery costs for DTwP vaccine.
	DT	Whether the database line reports delivery costs for DT vaccine.
	Td	Whether the database line reports delivery costs for Td vaccine.
	TT	Whether the database line reports delivery costs for TT vaccine.

DTP-HepB	Whether the database line reports delivery costs for DTP-HepB vaccine.
DTP-Hib	Whether the database line reports delivery costs for DTP-Hib vaccine.
DTwP-Hib	Whether the database line reports delivery costs for DTwP-Hib vaccine.
DTwP-HepB-Hib	Whether the database line reports delivery costs for DTwP-HepB-Hib vaccine.
DTP-HepB-Hib	Whether the database line reports delivery costs for DTP-HepB-Hib vaccine.
DTaP-Hib-IPV	Whether the database line reports delivery costs for DTaP-Hib-IPV vaccine.
OPV	Whether the database line reports delivery costs for OPV vaccine.
IPV	Whether the database line reports delivery costs for IPV vaccine.
Rotavirus (2 doses)	Whether the database line reports delivery costs for Rotavirus (2 doses) vaccine.
Rotavirus (3 doses)	Whether the database line reports delivery costs for Rotavirus (3 doses) vaccine.
PCV7	Whether the database line reports delivery costs for PCV7 vaccine.
PCV10	Whether the database line reports delivery costs for PCV10 vaccine.
PCV13	Whether the database line reports delivery costs for PCV13 vaccine.
HPV	Whether the database line reports delivery costs for HPV vaccine.
JE	Whether the database line reports delivery costs for JE vaccine.

	YF	Whether the database line reports delivery costs for YF vaccine.
	Meningococcal	Whether the database line reports delivery costs for Meningococcal vaccine.
	OCV	Whether the database line reports delivery costs for OCV vaccine.
	Influenza	Whether the database line reports delivery costs for Influenza vaccine.
	TCV	Whether the database line reports delivery costs for TCV vaccine.
	Malaria	Whether the database line reports delivery costs for Malaria vaccine.
	COVID-19	Whether the database line reports delivery costs for COVID-19 vaccine.
	More vaccine information	Any additional information about vaccines included in the study that may be relevant for the cost data analysis.
	List of vaccines included in the costing	The list of all vaccines that has been costed under the project or the study.
	Number of doses included in costing study	Total number of dose(s) required for the vaccine(s) included in the costing study.
	Coverage rate of vaccine(s)	Percentage of target population reached by the immunization program.
VACCINE DELIVERY	Number of doses delivered in study	Total number of doses of the relevant vaccine(s) delivered.
	Integrated delivery of 2+ vaccines? (SIA only)	Whether the cost is for integrated vaccine delivery (or co-delivery) of 2 or more vaccines through supplementary immunization activities.
	Routine vs SIA	Whether the vaccine(s) were delivered through the routine program or as part of supplementary immunization activities (SIA).
	Delivery site	Physical location where vaccines were administered to the target population, as described by the source document.

	Delivery strategy (based on reported delivery site)	Location where vaccines were administered to the target population, grouped in standard categories.
	Delivery sector	The sector through which the vaccines are delivered (public, private, NGO).
	Target delivery population	The population targeted by the immunization delivery, grouped in standard categories.
	Reported target delivery population	The population targeted by the immunization delivery, as reported by the source document.
	More vaccine delivery information	Any other information about vaccine delivery that may be relevant for the cost data analysis.
STUDY DESIGN AND METHODOLOGY	Study objective/purpose	What was the stated objective/aim/purpose of the study.
	Study design	The type of study design chosen by investigators: prospective, retrospective, systematic review.
	Study design (more details)	Any additional information on the type of study design chosen by investigators.
	Timeframe	The period of time represented by the cost data.
	Perspective	Who bears the costs taken into account in the analysis.
	Cost data source(s)	The sources from which the cost data were collected.
	Sample	Sampled sites included in the study.
	Economic, financial, or fiscal costs	Whether investigators reported economic costs, financial costs or fiscal costs.
	Economic, financial, or fiscal costs information	Additional information on whether investigators reported economic costs, financial costs or fiscal costs.
	Full or incremental costing	Whether costs reported are full or incremental.
	Full or incremental costing information	Additional information on whether costs reported are full or incremental.

	Startup and/or recurrent/ongoing costs	The types of costs included.
	Costing methodology	The approach taken to the costing process.
REPORTED CURRENCY AND CONVERSION TO 2016 USD	Currency year reported in the publication	The year associated with the reported currency, as reported by article/report.
	Reporting currency (code)	The three-letter code for the currency in which costs are reported.
	Original currency (code)	The three-letter code for the original currency in which costs were collected for the study.
	Currency exchange method used in the study	Reported method by which the original currency was converted into the reported currency.
	Currency exchange rate used in the study (original per 1 USD)	Reported amount of original currency per 1 USD
	Other currency and exchange rate information reported in the publication	Any additional information about the currency and exchange rate reported in the study
	Base year used for currency standardization	The currency year reported in the publication (see earlier column); if not reported, we used the data collection year; if not reported, we used the publication year.
	USD to LCU exchange rate (in base year) - for currency standardization	Exchange rate from USD (or other reported currency) to LCU, in the reported base year
	LCU inflation from base year to 2022 - for currency standardization	LCU inflation factor, from reported base year to 2022
	2022 LCU to USD - for currency standardization	Exchange rate from LCU to USD in 2022
	Comments on currency standadrization	Any comments on the currency inflation and conversion calculation

COST CATEGORIES INCLUDED	Paid human resources included	Whether paid human resources were included in the costing. This cost category includes: paid human resources at national, subnational, district and facility/service levels; includes those used for service delivery, supervision, planning, M&E, etc.
	Volunteer human resources included	Whether volunteer human resources for service delivery were included in the costing.
	Per diem and travel allowances included	Whether staff per diem and travel allowances (e.g. for outreach activities, supervision visits, etc.) were included in the costing.
	Cold chain equipment and their overheads (installation, energy, maintenance, repairs) included	Whether cold chain equipment and cold chain overhead costs were included in the costing. This category includes cold chain costs at all levels of the system. Cold chain overheads include: installation costs, energy to run the cold chain (electricity, fuel, propane), maintenance costs and spare parts/repairs.
	Vehicles, transport and fuel included	Whether vehicle and transportation costs were included in the costing. This includes vehicle and transportation costs at all levels of the system, as well as all type of vehicles (e.g. refrigerated trucks, 4WD, motorcycles, etc.) Cost of fuel, maintenance, overheads (registration/insurance), repairs/spare parts are also included.
	Training and capacity building included	Whether costs related to training (of health care workers) and capacity building were included in the costing.
	Social mobilization and advocacy included	Whether social mobilization and advocacy costs were included in the costing. This includes all activities undertaken to stimulate demand for immunization services, including: IEC, advocacy, and communications.
	Vaccine supplies included	Whether costs of vaccine supplies (syringes, etc.) were included in the costing.
	Other cost categories included	List of any other cost categories not covered by one of the aforementioned cost categories are included in the costing. These may include program management, printing, AEFI, vaccines etc.
	Reported cost exclusions	Any cost item or activity that is explicitly excluded from the costing.

	Supply chain only	Whether the delivery costs included are limited to supply chain only.
	Was the costed initiative a pilot or a demonstration project?	Whether the delivery costs included are part of a pilot/project or a program implemented at scale.
	Highest level of costs included (facility, district, province/region, national, other)	Highest level of cost included in the cost estimate presented on this line.
	Other cost categories information	Any comment that relates to cost categories.
COST REPORTED	Total cost reported?	Whether the source document also reports total costs.
	Total or unit costs disaggregated by resource type or activity?	Whether the source document also reports total or unit costs disaggregated by resource type (e.g. "paid labor", or "per diem and allowances") or by activity (e.g. "social mobilization" or "training").
	Cost per dose without vaccine	The cost per dose excluding vaccine cost, as reported by the source document.
	Cost per dose with vaccine	The cost per dose including vaccine cost, as reported by the source document.
	Cost per person in the target population without vaccine	The cost per person in the target population excluding vaccine cost, as reported by the source document.
	Cost per person in the target population with vaccine	The cost per person in the target population including vaccine cost, as reported by the source document.
	Number of persons included in "cost/person in target population" calculation	The total number of individuals who were eligible to receive the vaccine, and that was used as denominator for calculation of the cost per person in the target population.
	Cost per fully immunized person without vaccine	The cost per fully immunized person excluding vaccine cost, as reported by the source document.
	Cost per fully immunized person with vaccine	The cost per fully immunized person including vaccine cost, as reported by the source document.

Definition of fully immunized person	How the article/report authors defined "fully immunized."
N. of people included in fully immunized person calculation	Denominator value for the cost per fully immunized person calculation.
Other unit cost(s) reported	Any other type of unit cost reported in the source document.
Information of reported unit cost	Additional information regarding the unit cost reported in this line.

DEFINITIONS

Term	Definition
---	Reviewers could not find the indicated information in the article/report. For example, if a study does not discuss capital costs and their annualization, we have noted that methods for annualizing capital costs are "not reported" or "---".
Cost category	Groupings of costs; also known as cost item, line item, etc. We used the following cost categories: Paid human resources, Volunteer human resources, Per diem and travel allowances, Cold chain equipment and their overheads (installation, energy, maintenance, repairs), Vehicles, transport and fuel, Program management, Training and capacity building, Social mobilization and advocacy, Vaccine supplies, Other category costs.
Delivery cost	Frequently referred to as "operational costs". The costs associated with delivering immunizations to target populations, exclusive of vaccine costs. Delivery costs may include any or all of the following items: paid and volunteer human resources and associated per diem and travel allowances, cold chain equipment and overheads, vehicles, transport and fuel, program management, training and capacity building, social mobilization and advocacy, adverse event following immunization (AEFI) and disease surveillance, buildings, utilities, other overheads and shared costs, vaccine supplies, waste management, other supplies and recurrent costs and other costs. We refer to these inputs as "cost categories"; some articles/reports refer to them as line items and/or activities.
Delivery strategy	Where vaccines are delivered, such as through health facilities, outreach/mobile clinics (off-site delivery, generally to patients located more than a certain distance from a health facility; this delivery strategy may be called mobile in some countries, or outreach in others), temporary vaccination sites, schools, or multiple strategies (any combination of the previous options)
Discount rate	The rate at which future costs are considered compared to those that occur in the present.
Economic cost	Financial outlays plus opportunity costs of health worker time and any donated items such as vaccines.

Financial cost	Financial outlays, usually with straight-line depreciation of capital items.
Fiscal cost	Financial outlays, usually without depreciation of capital items.
Full/total	The sum of all costs associated with vaccination delivery.
Incremental	Additional costs associated with introducing a new vaccine or making a change in delivery.
Inferred	Not explicitly stated in the article/report but determined by the reviewers based on other information.
Not reported	Reviewers could not find the indicated information in the article/report. For example, if a study does not discuss capital costs and their annualization, we have noted that methods for annualizing capital costs are “not reported.”
Perspective	The point of view considered for costs (and benefits, if included), in a costing study; by whom the costs were incurred. Common perspectives can include provider, government, healthcare, insurer and societal.
Record	A record represents one or more unit costs with unique characteristics. While some articles/reports only report a single unit cost, most present multiple unit costs are calculated using different criteria (e.g., economic/financial/fiscal costs, full/incremental).
Record ID	Identifier for each row in the International Delivery Cost Catalogue (IDCC), representing unique unit cost(s) with a set of attributes, for example, economic, incremental costs of HPV delivery in schools. Many studies report multiple types of unit costs (e.g., financial, economic), so each is presented as a unique record ID. Record IDs including an underscore (_) are all from the same articles/reports.
Routine	Defined by WHO as "sustainable, reliable and timely interaction between the vaccine, those who deliver it and those who receive it to ensure every person is fully immunized against vaccine-preventable diseases" ¹
Shared costs	Delivery costs that are also used for non-immunization, for example vehicles that are used for outreach but also used for HIV.
Standardized findings	Refers to the data extracted as part of the systematic review, presented in a standard format in the International Delivery Cost Catalogue (IDCC) with all costs brought to 2022 USD.
Supplementary immunization activity (SIA)	Delivering vaccination to children otherwise missed by routine immunization, or in response to a specific event, such as a disease outbreak.
Type of cost	Either financial, fiscal or economic; see definitions.
Type of costing	Differentiated between full or total costing and incremental costing; see definitions.

¹ http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/routine_immunization/en/

Unit cost The cost of delivery of a single unit of immunization. The review includes three unit costs: per dose, per fully immunized person (FIC), per person in the target population.
