

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	View	Description
	Record ID	Basic	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	Basic	Description of the study or project.
	Database row description	Basic	Description of the data in the database line.
	Reference	Basic	Study or project reference.
	Country	Basic	The country where the study was conducted.
BACKGROUND	Region	Basic	The region (according to the World Bank classification) where the study was conducted.
	Country income level	Basic	The income level (according to the World Bank classification) of the country where the study was conducted at the time of publication.
	Country population	Advanced	The country where the study was conducted.

UNIT COSTS (2016 USD)	Geographic setting	Advanced	Whether the study was conducted in a rural or urban area (as defined by the authors of the study).
	Other contextual information	Advanced	Any additional contextual factor that may impact immunization programs and their costs.
	Cost per capita without vaccine (2016 USD)	Basic	Cost per capita without vaccine, in 2016 US\$.
	Cost per capita with vaccine (2016 USD)	Advanced	Cost per capita with vaccine, in 2016 US\$.
	Cost per capita information	Advanced	Comments about the cost per capita.
	Cost per dose without vaccine (2016 USD)	Basic	Cost per single dose without vaccine, in 2016 US\$.
	Cost per dose with vaccine (2016 USD)	Advanced	Cost per single dose with vaccine, in 2016 US\$.
	Cost per dose information	Advanced	Comments about the cost per dose.
	Cost per person in the target population without vaccine (2016 USD)	Basic	Cost per per in the target population without vaccine, in 2016 US\$.
	Cost per person in the target population with vaccine (2016 USD)	Advanced	Cost per per in the target population with vaccine, in 2016 US\$.
	Cost per person in the target population information	Advanced	Comments about the cost per person in the target population.
	Number of persons in "cost per person in target population" calculation	Advanced	Denominator value for the cost per person in the target population calculation.
	Cost per FIC without vaccine (2016 USD)	Basic	Cost per fully immunized child (FIC) without vaccine, in 2016 US\$.
	Cost per FIC with vaccine (2016 USD)	Advanced	Cost per fully immunized child (FIC) with vaccine, in 2016 US\$.

VACCINES	Cost per FIC information	Advanced	Comments about the reported cost per fully immunized child (FIC).
	Definition of FIC	Advanced	How the article/report authors defined "fully immunized."
	Number of children included in FIC calculation	Advanced	Denominator value for the cost per fully immunized child (FIC) calculation.
	Entire EPI schedule?	Basic	Whether the study costed the entire EPI schedule.
	New vaccine introduction	Basic	Whether a new vaccine was recently introduced in the schedule.
	Other new vaccine introduction information	Advanced	Comments about new vaccine introduction.
	Vaccines costed	Basic	Vaccine(s) included in the study.
	BCG	Advanced	Whether the BCG vaccine is included in the costing study.
	Measles	Advanced	Whether the Measles vaccine is included in the costing study.
	MR	Advanced	Whether the MR vaccine is included in the costing study.
	MMR	Advanced	Whether the MMR vaccine is included in the costing study.
	HepB	Advanced	Whether the HepB vaccine is included in the costing study.
	DTP	Advanced	Whether the DTP vaccine is included in the costing study.
	DTwP	Advanced	Whether the DTwP vaccine is included in the costing study.
	DT	Advanced	Whether the DT vaccine is included in the costing study.

Td	Advanced	Whether the Td vaccine is included in the costing study.
TT	Advanced	Whether the TT vaccine is included in the costing study.
DTP-HepB	Advanced	Whether the DTP-HepB vaccine is included in the costing study.
DTP-Hib	Advanced	Whether the DTP-Hib vaccine is included in the costing study.
DTwP-Hib	Advanced	Whether the DTwP-Hib vaccine is included in the costing study.
DTwP-HepB-Hib	Advanced	Whether the DTwP-HepB-Hib vaccine is included in the costing study.
DTP-HepB-Hib	Advanced	Whether the DTP-HepB-Hib vaccine is included in the costing study.
DTaP-Hib-IPV	Advanced	Whether the DTaP-Hib-IPV vaccine is included in the costing study.
OPV	Advanced	Whether the OPV vaccine is included in the costing study.
IPV	Advanced	Whether the IPV vaccine is included in the costing study.
Rotavirus (2 doses)	Advanced	Whether the Rotavirus (2 doses) vaccine is included in the costing study.
Rotavirus (3 doses)	Advanced	Whether the Rotavirus (3 doses) vaccine is included in the costing study.
PCV7	Advanced	Whether the PCV7 vaccine is included in the costing study.
PCV10	Advanced	Whether the PCV10 vaccine is included in the costing study.
PCV13	Advanced	Whether the PCV13 vaccine is included in the costing study.

	HPV	Advanced	Whether the HPV vaccine is included in the costing study.
	JE	Advanced	Whether the JE vaccine is included in the costing study.
	YF	Advanced	Whether the YF vaccine is included in the costing study.
	Meningococcal	Advanced	Whether the Meningococcal vaccine is included in the costing study.
	OCV	Advanced	Whether the OCV vaccine is included in the costing study.
	Influenza	Advanced	Whether the Influenza vaccine is included in the costing study.
	More vaccine information	Basic	Any additional information about vaccines included in the study that may be relevant for the cost data analysis.
	Number of doses included in costing study	Advanced	Total number of dose(s) required for the vaccine(s) included in the costing study.
	Coverage rate of vaccine(s)	Advanced	Percentage of target population reached by the immunization program.
VACCINE DELIVERY	Number of doses delivered in study	Advanced	Total number of doses of the relevant vaccine(s) delivered.
	Mode of administration (for single vaccines only)	Advanced	The mode of administration for single vaccine.
	Routine vs SIA	Advanced	Whether the vaccine delivery are routine or part of supplementary immunization activities (SIA).
	Delivery strategy	Basic	How/where the vaccines are delivered (health centers, community facilities, schools, etc.).
	Delivery sector	Advanced	The sector through which the vaccines are delivered (public, private, NGO).

STUDY DESIGN AND METHODOLOGY	Target delivery population	Basic	The population targeted by the immunization delivery.
	More vaccine delivery information	Advanced	Any other information about vaccine delivery that may be relevant for the cost data analysis.
	Study objective/purpose	Advanced	What was the stated objective/aim/purpose of the study
	Study design	Advanced	The type of study design chosen by investigators: prospective, retrospective, systematic review.
	Study design (more details)	Advanced	Any additional information on the type of study design chosen by investigators.
	Timeframe	Advanced	The period of time represented by the cost data.
	Perspective	Advanced	Who bears the costs taken into account in the analysis.
	Cost data source(s)	Advanced	The sources from which the cost data were collected.
	Number of sampled facilities	Advanced	The number of facility observations in the sample.
	Sampling strategy	Advanced	The sampling method used for choosing the specific sample analyzed in the study.
	Economic, financial, or fiscal costs	Basic	Whether investigators reported economic costs, financial costs or fiscal costs.
	Economic, financial, or fiscal costs information	Advanced	Additional information on whether investigators reported economic costs, financial costs or fiscal costs.
	Full or incremental costing	Basic	Whether costs reported are full or incremental.
	Full or incremental costing information	Advanced	Additional information on whether costs reported are full or incremental.

	Startup and/or recurrent/ongoing costs	Basic	The types of costs included.
	Costing methodology	Advanced	The approach taken to the costing process.
	Data analysis strategy (cost aggregation, weighting, averaging)	Advanced	The analysis performed to estimate the cost findings.
	Methods for annualization of capital items (describe)	Advanced	How capital items were annualized.
	Discount rate (capital items)	Advanced	Rate used to discount capital items.
	Methodology for allocation of shared costs	Advanced	Description of the methodology used to allocate shared costs to immunization.
	Other study design and methods information	Advanced	Any other information related to the costing study design and methods
REPORTED CURRENCY AND CONVERSION TO 2016 USD	Reported currency year	Advanced	The year associated with the reported currency, as reported by article/report.
	Reported currency (code)	Advanced	The three letter code for the currency in which costs are reported.
	Reported base year (or year of data collection)	Advanced	The reported currency year (see earlier column); if not reported, we used the costing year; if not reported, we used the publication year.
COST CATEGORIES INCLUDED	Paid human resources included	Basic	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	Basic	Whether volunteer human resources for service delivery were included in the costing.

Per diem and travel allowances included	Basic	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	Basic	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	Basic	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.
Program management included	Basic	Whether program management costs were included in the costing. Program management includes M&E, information systems, planning, etc.
Training and capacity building included	Basic	Whether costs related to training (of health care workers) and capacity building were included in the costing.
Social mobilization and advocacy included	Basic	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.
AEFI and disease surveillance included	Basic	Whether costs related to monitoring of adverse events following immunization (AEFI) and/or disease surveillance were included in the costing.

Buildings, utilities, other overheads and/or shared costs included	Basic	Whether buildings, utilities, and other overhead costs were included in the costing. Utilities include: water, internet, phones, mobile phone credit, etc.
Vaccines included	Basic	Whether the cost of actual vaccines purchased/procured was included in the costing. This also includes, if applicable, import duties.
Vaccine supplies included	Basic	Whether costs of vaccine supplies (syringes, etc.) were included in the costing.
Waste management included	Basic	Whether costs related to waste and waste management were included in the costing. This also includes costs such as safety boxes, disposal costs, etc.
Other supplies and recurrent costs included	Basic	Whether the costing included other supplies and recurrent costs. This includes costs relating to stationery, printing, immunization ID cards, other materials, other recurrent costs, etc.
Other included	Basic	Whether other costs not covered by one of the aforementioned cost categories are included in the costing.
Number of included cost categories (of 15 total)	Basic	Count of included cost categories (of 15 total).
Shared cost items	Advanced	What costs were included that are shared with other health programs.
Reported cost exclusions	Basic	Any cost item or activity that is explicitly excluded from the costing.
Supply chain only	Advanced	Whether the delivery costs included are limited to supply chain only.
Scale (pilot/project or national)	Advanced	Whether the delivery costs included are part of a pilot/project or a national program.

	Highest level of costs included	Advanced	Whether costs included in the article/report are for project-level or at-scale implementation.
	Other cost categories information	Advanced	Any comment that relates to cost categories.
REPORTED COSTS (See column "Reported base year (or year of data collection)" for year)	Recurrent costs	Advanced	The recurrent costs relating to the delivery of the vaccine(s) costed in the base currency and base currency year.
	Capital costs	Advanced	The capital costs relating to the delivery of the vaccine(s) costed in the base currency and base currency year.
	% of paid human resources	Advanced	The share of paid human resources to the total reported cost, calculated by the reviewers.
	% of volunteer human resources	Advanced	The share of volunteer human resources to the total reported cost, calculated by the reviewers.
	% of per diem and travel allowances	Advanced	The share of per diem and travel allowances to the total reported cost, calculated by the reviewers.
	% of cold chain equipment and their overheads (installation, energy, maintenance, repairs)	Advanced	The share of cold chain equipment and their overheads to the total reported cost, calculated by the reviewers.
	% of vehicles, transport and fuel	Advanced	The share of vehicles, transport and fuel to the total reported cost, calculated by the reviewers.
	% of program management	Advanced	The share of program management to the total reported cost, calculated by the reviewers.
	% of training and capacity building	Advanced	The share of training and capacity building to the total reported cost, calculated by the reviewers.
	% of social mobilization and advocacy	Advanced	The share of social mobilization and advocacy to the total reported cost, calculated by the reviewers.

	% of AEFI and disease surveillance	Advanced	The share of AERI and disease surveillance to the total reported cost, calculated by the reviewers.
	% of buildings, utilities, other overheads and/or shared costs	Advanced	The share of buildings, utilities, other overheads and/or shared costs to the total reported cost, calculated by the reviewers.
	% of vaccines	Advanced	The share of vaccines of the total reported cost, calculated by the reviewers.
	% of vaccine supplies	Advanced	The share of vaccine supplies to the total reported cost, calculated by the reviewers.
	% of waste management	Advanced	The share of waste management to the total reported cost, calculated by the reviewers.
	% of other supplies and recurrent costs	Advanced	The share of other supplies and recurrent costs to the total reported cost, calculated by the reviewers.
	% of other category costs	Advanced	The share of other category costs to the total reported cost, calculated by the reviewers.
	Disaggregated costs	Advanced	Any costs reported at a lower level of disaggregation than cost category (for example, building and utility costs are reported separately within the cost category "buildings, utilities, other overheads and/or shared costs").
	Other disaggregated costs information	Advanced	Any other information on disaggregated costs.
MORE COST DETAILS (2016 USD)	Recurrent costs	Advanced	The total recurrent costs relating to the delivery of the vaccine(s) costed in 2016 US\$.
	Capital costs	Advanced	The total capital costs relating to the delivery of the vaccine(s) costed in 2016 US\$.

Paid human resources	Basic	The total paid human resource costs in 2016 US\$.
Volunteer human resources	Basic	The total volunteer human resource costs in 2016 US\$.
Per diem and travel allowances	Basic	The total per diem and travel allowances costs in 2016 US\$.
Cold chain equipment and their overheads (installation, energy, maintenance, repairs)	Basic	The total cold chain equipment and overhead costs in 2016 US\$.
Vehicles, transport and fuel	Basic	The total vehicles and transportation costs in 2016 US\$.
Program management	Basic	The total program management costs in 2016 US\$.
Training and capacity building	Basic	The total training and capacity building costs in 2016 US\$.
Social mobilization and advocacy	Basic	The total social mobilization and advocacy costs in 2016 US\$.
AEFI and disease surveillance	Basic	The total AEFI and disease surveillance costs in 2016 US\$.
Buildings, utilities, other overheads and/or shared costs	Basic	The total buildings, utilities, and other overheads/shared costs in 2016 US\$.
Vaccines	Basic	The total vaccines costs in 2016 US\$.
Vaccine supplies	Basic	The total vaccines supplies costs in 2016 US\$.
Waste management	Basic	The total waste management costs in 2016 US\$.
Other supplies and recurrent costs	Basic	The total other supplies costs and recurrent costs in 2016 US\$.

	Other category costs	Basic	The total other costs in 2016 US\$.
	Total cost (full or incremental)	Advanced	The total costs in 2016 US\$.
SENSITIVITY AND UNCERTAINTY	Sensitivity analysis (only for delivery cost)	Advanced	Whether or not a sensitivity analysis pertaining to delivery costs was conducted.
	Sensitivity analysis description	Advanced	Description of the sensitivity analysis.
	Uncertainty Remarks	Advanced	Conclusions of the sensitivity analysis.
QUALITY	Quality assessment score (Range: 1-3) (See Methodology Note, Annex 5 for interpretation of score)	Advanced	The article/report's quality assessment score, calculated by the reviewers.

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 “---”.
Annualization	Costing method to spread the costs of items used for more than one year over the lifetime of the item.
Cannot estimate	Value cannot be calculated, due to missing/incomplete data or division by zero.
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 (economic costs only), 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, AEFI and disease surveillance, Buildings, utilities, other overheads and/or shared costs, Vaccines, Vaccine supplies, Waste management, Other supplies and recurrent costs, Other category costs.
Delivery cost	Frequently referred to at country level 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	How and 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), schools, child health days/weeks or national immunization days/weeks, campaigns and multiple strategies (two or more of the aforementioned strategies).
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.
Fully immunized child (FIC)	Full immunization of a vaccine or specifically defined by each article/report, but generally refers to provision of a certain number of doses of a specific vaccine(s) to a specific group and at a clear point in time, e.g., infants who received one dose of BCG; three doses each of OPV, DPT, and Hepatitis B vaccines; and one dose of measles vaccine before reaching one year of age.
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; to whom the costs were incurred. Common perspectives include provider, government, healthcare, insurer and societal.
Quality assessment score	Indication of the quality of each article/report in the review, as assessed by the review team. Measured on three dimensions: methodological rigor and reporting standards (8 items), uncertainty of results (3 items) and risk of bias and limitations (3 items). Each item was given an individual score of 1 (lowest), 2, or 3 (highest); for some items there was also a “not applicable” option. Scores for all items were summed and averaged, excluding any “not applicable” answers, to produce a final score for each article/report on the same 1 to 3 scale.

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" (cite WHO: http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/routine_immunization/en/)
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 2016 USD.
Supplementary immunization activity (SIA)	Strategy for 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.
Unit cost	The cost of delivery of a single unit of immunization. The review includes four unit costs: per dose, per fully immunized child (FIC), per person in the target population, per capita.