

## Boxes

### Box 1. Key terminologies

*Integrated child health events (ICHes)*, a terminology developed for this study, is an overarching term for the integrated health service delivery approaches encompassing a wide variety of campaigns. The terminology allowed for a comprehensive approach to understanding the campaigns as a specific style of service delivery model rather than looking at different campaign modes separately, the characteristics of which are often difficult to separate.

*Child Health Days (CHDs)* are events generally conducted every six months, organized to deliver two or more health and/or nutrition services to infants, children under the age of 5, and, in some cases, pregnant or lactating women(1)(Appendix 6). The main difference between CHDs and ICHes is its frequency, as ICHes are more inclusive because the definition includes any campaign that is given at any frequency any time of the year, while CHDs are conducted twice a year, usually six months apart.

*Disease-prevention immunization-focused campaigns* are events focused on eradicating or controlling specific diseases. Their frequency is based on disease-control priorities and is linked to disease outbreaks.(9)

*Measles supplementary immunization activities (SIAs)* target all children in a defined age group with the objective of reaching those who have never had measles vaccines, and to provide an opportunity for a second dose for cases of primary vaccine failure.(10) It is now very common to deliver additional child survival interventions along with the measles vaccine through SIAs.(11, 12)

*Polio national immunization days (NIDs)* are mass immunization campaigns conducted in two rounds, approximately one month apart, with the aim of interrupting the circulation of poliovirus by immunizing every child under five years with two doses of oral polio vaccine (OPV).

*Coverage outcome* in this study refers to the percentage of children who received an intervention.

## **Box 2. Description of the original UNICEF CHD database and the revised database**

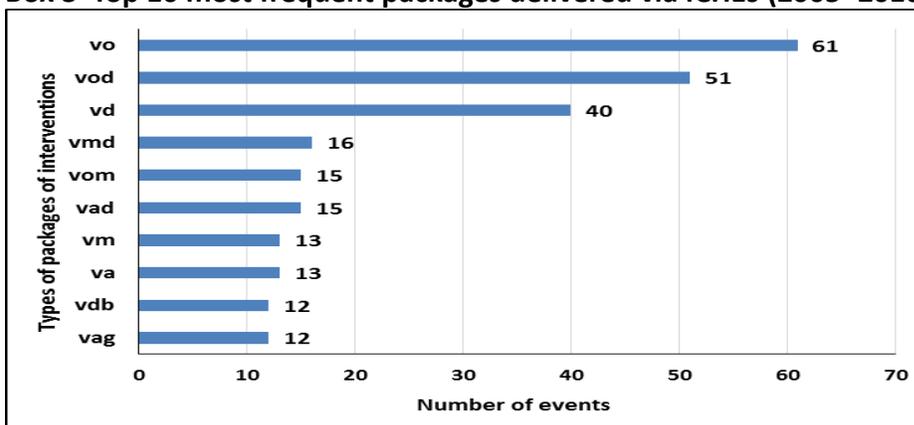
**2a. Original UNICEF CHD database** contains data compiled from UNICEF's vitamin A supplementation (VAS) database and the WHO/UNICEF Joint Reporting Form (JRF) immunization database. UNICEF has collected VAS coverage data annually since 1999, and from 2005 has captured information of different types of health service delivery mechanism. Annual review processes with UNICEF country office focal points worldwide take place for VAS coverage for publication in State of the World Children (SOWC) and on the ChildInfo online database.

The WHO/UNICEF JRF immunization database includes extensive information on the vaccine delivered, type of campaign (e.g., measles SIA, polio NIDs, tetanus, etc.), date of delivery, and targeted geographic area and country, among others.(7) Data is derived from administrative reports sent from service providers (e.g. health centre staff, vaccination teams, private physicians) to WHO and UNICEF at the country level, and immunization coverage surveys. The final estimates are assessed by WHO and UNICEF at the regional and central levels.

Data on co-delivered interventions in the UNICEF CHD database are VAS, immunization, 'different antigens' (i.e., measles, polio, tetanus toxoid), deworming, distribution or retreatment of insecticide-treated nets (ITNs); growth monitoring (GM), water, sanitation and hygiene (WASH), behaviour change communication (BCC) and other services. Descriptions of 'other services' such as family planning, HIV-prevention and BCC messages were noted in some events. Some SIAs and NIDs were also coded as CHD if an event was held approximately six months immediately prior to or immediately following another similar child health event. SIAs or NIDs that did not meet the six-monthly schedule were not coded as a CHD event but as measles SIA or polio NID.(1) There are occasional coverage levels reported over 100% in the UNICEF CHD database, usually as a result of miscalculation in the numerator or denominator, a change in target age groups, or inclusion of children outside the target age group in the numerator. Coverage reported over 100% in the UNICEF CHD database was considered to be 100% in this study.

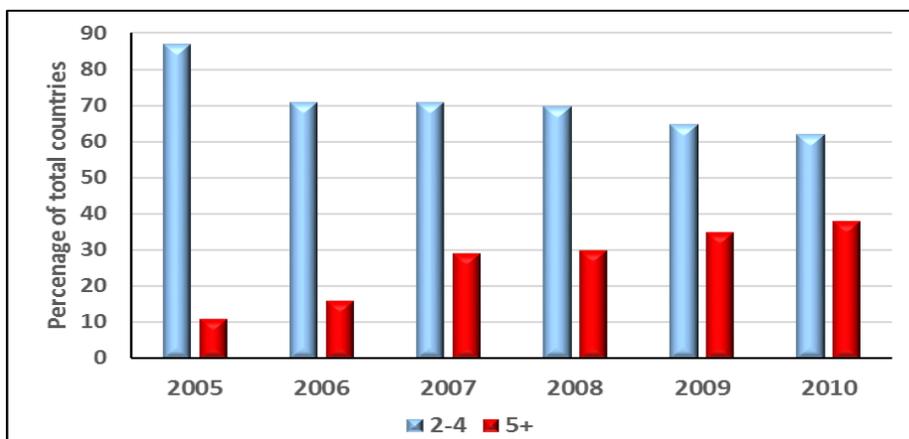
**2b. Revised ICHE database:** The original UNICEF CHD database was modified by the authors for this analysis. The different vaccines delivered (measles, oral polio vaccine (OPV), tetanus toxoid or 'other antigens' (which included yellow fever, hepatitis, rotavirus) were recounted as separate interventions instead of grouping them together under 'immunization' as was the case in the original CHD database, resulting in a more accurate number of interventions for each event. Events that delivered one intervention were excluded from the analysis as they are not consistent with the definition of ICHEs. There were three events which delivered only one intervention (notably VAS) between 2005–2010, hence those events were excluded from the analysis. Events coded as measles SIAs and polio NIDs were also included in the analysis along with CHDs. As complete information on event composition was available only from 2005–2010, data from 1999–2004 were excluded from this analysis. This totalled to 597 ICHEs that were held within 2005–2010, in a total of 73 countries out of 83 that were analysed. The revised database is referred to as the *ICHE database* in this paper.

**Box 3 Top 10 most frequent packages delivered via ICHEs (2005–2010)**

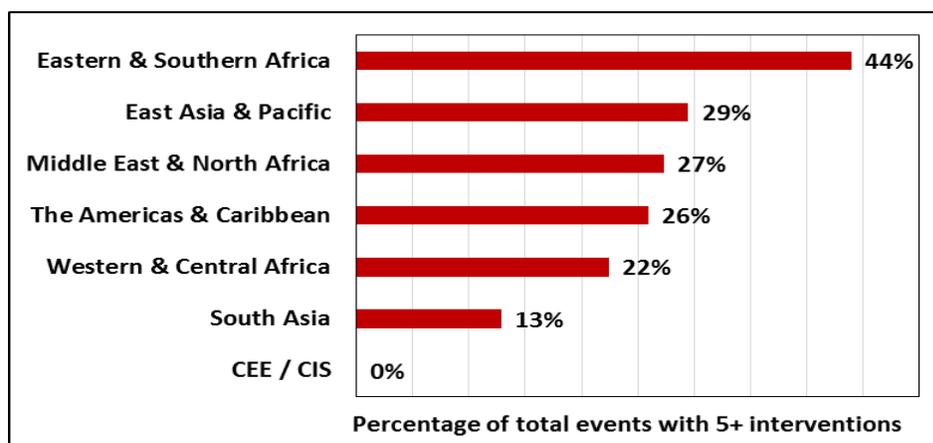


Variable	Definition
v	Vitamin A
o	Oral polio vaccine
d	Deworming
m	Measles-containing vaccine
a	Other antigens (such as: yellow fever, hepatitis, rotavirus, unidentified immunization)
b	Behaviour change communication
g	Growth monitoring
t	Tetanus-toxoid vaccine
n	Insecticide-treated nets
w	Water, sanitation & hygiene

**Box 4 Number of countries which delivered two to four interventions vs five or more interventions, 2005–2010**



**Box 5 Proportion of regions delivering five or more interventions during ICHE, 2005–2010**  
 (% of total events with five+ interventions)



**Box 6 Top countries and frequency with which those countries delivered more than five interventions during an integrated child health event (2005–2010)**

Countries that delivered five or more (5+) interventions	No. of occurrences
Zambia	12
Uganda	10
Ethiopia	9
Nigeria, Philippines	8
Ghana	7
Burkina Faso, Sierra Leone	6
Burundi, Madagascar, Rwanda	5

**Box 7 Frequency, means and medians of top 10 packages of interventions**

Ranking	Package	Frequency	Mean coverage (vitamin A, %)	Median coverage (vitamin A, %)
1	vo	61	86	93
2	vod	51	92	93
3	vd	40	86	92
4	vmd	16	86	89
5	vad	15	80	83
6	vom	15	90	93
7	va	13	84	93
8	vm	13	92	83
9	vag	12	67	94
10	vdb	12	95	92

**Box 8 Kruskal-Wallis test results: vitamin A, packages of interventions**

N	238
Median	93
Chi-square	15.7
df	9
p-value	0.074

**Box 9 Vitamin A coverage by number of interventions, global (2005–2010)**

