Table 1. Recent coverage trends (WUENIC estimates) in GAVI-eligible countries (excluding EUR) and health resources

1a. High (>80%) coverage >4 yrs													
					Drop-	Govt	Birth	# un-	# under-	Nurses/	THE/cap	W Bank	ODA
		DTP 3 (%)		DTP1	out	diff	cohort	vacc	vacc	10k	2006	Class	CH
Country	2000	2005	2009	2009	2009	2009	2009 *1000	2009	2009	pop	PPP int$	2009	$/child
AFR													
Burundi	80	87	92	98	6	7	283	5660	22640	2	15	LI	9.6
Eritrea	90	96	99	99	0	-14	185	1850	1850	6	28	LI	5.1
Gambia	89	89	98	98	0	-4	62	1240	1240	13	56	LI	10.7
Ghana	88	84	94	96	2	0	766	30640	45960	9	100	LI	11.8
Lesotho	83	87	83	93	11	-11	59	4130	10030	6	143	LMI	5.1
Malawi	75	93	93	97	4	0	608	18240	42560	6	70	LI	14.5
Rwanda	90	95	97	98	1	n/a	413	8260	12390	4	210	LI	20.7
Sao Tome & P	82	97	98	98	0	0	5	100	100	19	141	LMI	n/a
Senegal	52	84	86	94	9	0	476	28560	66640	3	72	LI	11.4
U R Tanzania	79	90	85	90	6	2	1812	181200	271800	4	45	LI	8
Togo	64	82	89	93	4	0	215	15050	23650	4	70	LI	3.1
AMR													
Bolivia	77	85	85	87	2	0	262	34060	39300	21	204	LMI	7.9
Cuba	95	89	96	98	2	0	116	2320	4640	74	363	UMI	n/a
Guyana	88	93	98	98	0	0	13	260	260	23	264	LMI	n/a
Honduras	94	98	98	99	1	0	202	2020	4040	13	241	LMI	n/a
Nicaragua	83	88	98	98	0	0	140	2800	2800	11	251	LMI	n/a
EMR													
Pakistan	62	80	85	90	6	0	5,403	540300	810450	5	51	LMI	3.5
SEAR													
Bangladesh	81	93	94	99	5	-7	3,401	34010	204060	3	69	LI	3.3
Bhutan	92	95	96	98	2	0	15	300	600	3	107	LMI	n/a
D P R Korea (	54	79	93	94	1	0	327	19620	22890	41	49	LI	n/a
Sri Lanka	99	99	97	98	1	0	364	7280	10920	17	213	LMI	n/a
WPR													
Cambodia	59	82	94	99	5	0	367	3670	22020	9	167	LI	4
China	85	87	97	98	1	0	18294	365880	548820	10	342	LMI	0.3
Mongolia	95	99	95	95	0	0	50	2500	2500	35	149	LMI	n/a
Viet Nam	96	95	96	97	1	0	1,485	44550	59400	8	264	LI	n/a

1b. Medium (60-80%) coverage in 2005 and/or 2009													
	DTP 3 (%)			DTP1	Drop-out	Govt diff	# un-vacc	# under-vacc	Nurses/ 10k	THE/ cap	GAVI Grouping (GNI	World Bank	ODA CH
Country	2000	2005	2009	2009	2009	2009	2009	2009	pop	2006	2005)	Class	$/child
										PPP int$		2009	
Benin	78	70	83	99	16	15	3490	59330	8	46	Poorest	LI	19.6
Burkina Faso	57	82	82	89	8	17	81180	132840	5	87	Poorest	LI	7.7
Cameroon	62	80	80	88	9	0	85320	142200	16	80	Least poor	LI	5.1
Côte d'Ivoire	67	76	81	95	15	0	36450	138510	6	66	Fragile	LMI	2.4
Guinea-Bissau	49	68	68	85	20	14	9900	21120	7	40	Poorest	LI	4.2
Kenya*	82	76	75	80	6	0	306000	382500	12	105	Intermed	LI	12.9
Mali	43	77	74	85	13	15	82650	143260	6	65	Poorest	LI	7.6
Mauritania	53	71	64	79	19	3	22890	39240	6	45	Poorest	LI	7.3
Mozambique	70	76	76	88	14	0	105240	210480	3	56	Poorest	LI	10.8
Sierra Leone	44	65	75	87	14	16	29510	56750	5	41	Fragile	LI	9.3
Uganda	52	64	64	90	29	19	150200	540720	7	143	Poorest	LI	9.4
Zambia	85	82	81	92	10	17	43920	104310	20	62	Poorest	LI	23.5
Zimbabwe	79	65	73	87	16	0	49270	102330	7	147	Intermed	LI	6.6
EMR													
Yemen	61	65	66	77	14	20	198030	292740	7	82	Poorest	LI	3
EUR													
Azerbaijan	75	72	73	79	8	21	35490	45630	84	218	Least Poor	LMI	10
SEAR													
India	60	67	66	83	20	n/a	5E+06	9107580	13	109	Intermed	LMI	2.7
Indonesia	71	72	82	89	8	0	459140	751320	8	87	Least Poor	LMI	2
WPR													
Kiribati	90	79	86	92	7	0	n/a	n/a	30	290	Least Poor	LMI	n/a
Solomons	82	78	81	83	2	0	2720	3040	14	107	Poorest	LMI	n/a

1c. Increasing coverage

Country	DTP 3 (%) 2000	DTP 3 (%) 2005	DTP 3 (%) 2009	DTP1 2009	Drop-out 2009	Govt diff 2009	# un-vacc 2009	# under vacc 2009	Nurses/10k pop	THE/cap 2006 PPP int$	GAVI Grouping (GNI 2005)	W Bank Class 2009	ODA CH $/child
AFR													
Angola*	31	47	73	93	22	0	54880	211680	14	71	Fragile	LMI	5.4
Comoros (the	70	68	83	94	12	0	1320	3740	7	35	Poorest	LI	n/a
Congo (the)	33	65	91	92	1	0	10080	11340	10	31	Fragile	LI	1.3
DRC	40	60	77	91	15	15	263700	673900	5	18	Fragile	LI	3.6
Ethiopia	56	69	79	86	8	0	438480	657720	2	22	Poorest	LI	9.3
Liberia	46	60	64	75	15	28	37250	53640	3	39	Fragile	LI	15.3
Madagascar	57	82	78	80	3	11	139000	152900	3	34	Poorest	LI	5.7
Niger (the)	34	45	70	82	15	23	146700	244500	2	27	Poorest	LI	9.1
EMR													
Afghanistan*	31	76	83	94	12	0	78120	221340	5	29	Fragile	LI	10.3
Djibouti	46	71	89	90	1	0	2400	2640	4	100	Least Poor	LMI	12.8
Sudan (the)*	62	78	84	92	9	7	104000	208000	9	61	Fragile	LMI	11.1
SEAR													
Myanmar	82	73	90	93	3	0	71120	101600	10	43	Poorest	LI	2.5
Nepal	80	75	82	84	2	7	116800	131400	5	78	Poorest	LI	2
Timor-Leste	..	55	72	76	5	0	11040	12880	22	169	Fragile	LMI	n/a

1d. Low (<60%) coverage

Country	DTP 3 (%) 2000	DTP 3 (%) 2005	DTP 3 (%) 2009	DTP1 2009	Drop-out 2009	Govt diff 2009	# un-vacc 2009	# under vacc 2009	Nurses/10k pop	THE/cap 2006 PPP int$	GAVI Grouping (GNI 2005)	W Bank Class 2009	ODA CH $/child
AFR													
CAR	37	54	54	64	16	22	55440	70840	4	55	Fragile	LI	5.7
Chad	26	23	23	45	49	52	279400	391160	3	40	Poorest	LI	2.1
Eq Guinea	33	33	33	65	49	41	9100	17420	5	280	Poorest	HI	37.8
Guinea	47	59	57	75	24	28	99250	170710	5	116	Poorest	LI	4.2
Nigeria	29	36	42	52	19	29	3E+06	4E+06	17	50	Intermed	LMI	6.9
AMR													
Haiti	49	59	59	83	29	n/a	46580	112340	1	96	Fragile	LI	11.1
EMR													
Somalia	33	35	31	40	23	20	241200	277380	2	...	Fragile	LI	5.8
WPR													
Lao PDR**	51	49	57	76	25	10	41280	73960	10	85	Poorest	LI	4.7
PNG	59	61	52	70	26	12	62400	99840	5	134	Intermed	LMI	12.2

* WHO-UNICEF estimates since 2000 based entirely or almost entirely on administrative reports and WHO-UNICEF recommend a national high-quality survey be conducted

** WHO-UNICEF note uncertainty in the size of the birth cohort. No recent nationally representative survey conducted

Dropout = difference in DTP1 and DTP3 coverage expressed as a percentage of DTP1 coverage= ((DTP1-DTP3)*100)/DTP1

Govt DTP3 diff = absolute difference between reported DTP3 coverage and WHO-UNICEF best estimates

THE: total health expenditure

ODA CH : official development assistance for child heatlh services - from Greco et al Lancet 2008 - only estimated for the 68 Countdown priority countries

Table 2. **Main countries with internally displaced populations and/or people in refugee-like situations due to conflict, 2007-8**
Source: Human Development Report 2009

Country	Internally displaced Populations 2008	People in refugee-like situations in other countries, 2007
Afghanistan	200000	1147800
Angola	20000	
Azerbaijan	573000	
Bangladesh	500000	
Bosnia and Herzegovina	125000	
Burundi	100000	
Central African Republic	108000	
Chad	186000	
Colombia	0	481600
Cote d'Ivoire	621000	
D.R. Congo	1400000	
Eritrea	32000	
Ethiopia	200000	
India	500000	
Iraq	2842000	30000
Kenya	400000	
Myanmar	503000	
Peru	150000	
Philippines	314000	
Serbia	248000	
Somalia	1100000	
Sri Lanka	500000	
Sudan	6000000	
Syrian Arab Republic	433000	
Timor-Leste	30000	
Uganda	869000	

Table 3: **Indicators to monitor immunization program performance** (adapted from Hadler et al 2008)

Program component	Indicators
Program outputs	% Fully vaccinated children (if routine reports are used, DTP3 taken as proxy) % districts with ≥80% DTP3 coverage in infants* % districts with U90% measles vaccine coverage in infants*
Service delivery**	% of planned outreach sessions that were conducted on schedule % of planned fixed site sessions that were conducted on schedule
Access to services	% of children up-to-date (BCG and DTP1/OPV1) by age 2 months
Tracking activities	"Dropout" - difference in percentage receiving DTP1/OPV1 and either DTP3/OPV3 or measles vaccine
Use of all opportunities	Percentage of children receiving all vaccines for which they are eligible at each visit
Safety	Proportion of districts that have been supplied with adequate (equal or more) number of AD syringes for all routine immunizations during the year[*]
Logistics and cold chain	Proportion of districts that had no interruption in vaccine supply[*] Percentage of facilities storing vaccine at recommended temperatures Vaccine effectiveness in expected range for each vaccine evaluated
Transport***	Kilometers/vehicle or motorbike/month (high km = high utilization) Percent use for service delivery and service delivery support (higher=more effective) Policy of planned preventive maintenance (PPM) & % PPM activities conducted Full cost per km (low cost = more efficient use of vehicles/motorbikes)
Surveillance/ monitoring	% expected district disease surveillance reports received at national level * % expected district coverage reports received at national level*
Management and supervision	Country has 5-year immunization plan % districts having microplans that include immunization activities* % districts that did ≥1 supervisory visit to all Health facilities in last year*
Provider knowledge***	Proportion of providers who know and follow recommended guidelines, including those on simultaneous administration, contraindications, and safe injection procedures

* on the WHO-UNICEF Joint Reporting Form on Immunization (JRF)
** proposal in GPEI strategic plan that polio officers will assist in monitoring these indicators
*** no indicators routinely monitored by EPI to date

Table 4. **Advantages and disadvantages of methods to measure vaccination coverage**

Method	Advantages	Disadvantages
Register-based (electronic)	Can give complete and accurate information on cumulative vaccination status of individuals and populations Can be used to set appointments, issue reminders and recalls Use of electronic systems could reduce time spent on paper registers that are widespread in low income countries and often not used	Need good computer access Need complete birth registry for true denominator Need unique ID number that is kept throughout life If held locally, difficult to track vaccination of migrants If held nationally, feedback/use at local level may be slow Requires adequate funding and human resources
Routine reports of vaccinations delivered	Simple in conception Continuous information allows monitoring of cumulative coverage through the year and by district/health facility Can be used at local level to track coverage and dropout rates	Population denominators often inaccurate Private sector often does not report Exaggeration of doses administered common (e.g. double-counting of same child if home-based record mislaid; inclusion of children outside target age group, or purposeful exaggeration) Transcription errors at each health system level when paper-based systems used
Surveys	If well-conducted, can provide accurate information Other indicators (e.g. missed opportunities, caretaker knowledge) can be assessed Involvement of health workers can be training opportunity Large-scale surveys for multiple programs can reduce costs Lot quality sample surveys can be used to identify poor-performing districts/health facilities	Quality of data depends on training, supervision and quality control Sampling frame often based on outdated census information Home-based records may be missing or incomplete Participation rate will determine reliability of results. Often long delays until results are known. Small sample sizes give imprecise results; large sample sizes are expensive and more time-consuming