

FIGURE 15

Smeared-positive case detection rate by DOTS programmes, by WHO region, 1995–2003.
Heavy line shows global DOTS case detection rate.

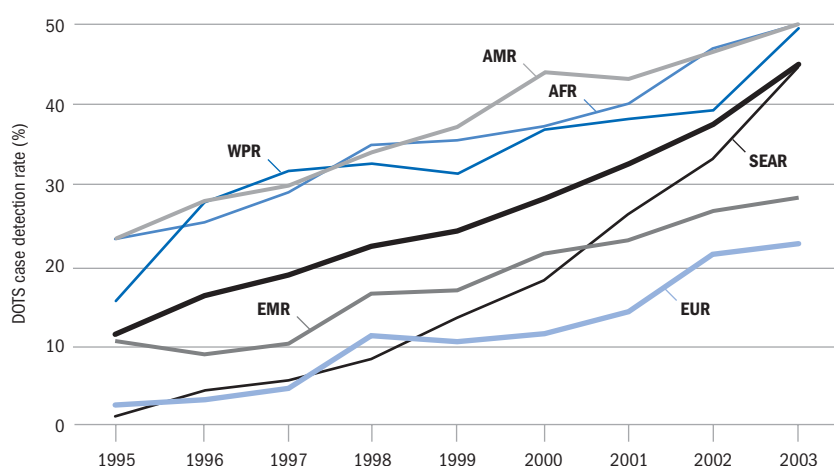


TABLE 6

Case detection rate of new smear-positive cases (%), 1995–2003

	DOTS PROGRAMMES									WHOLE COUNTRY								
	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995	1996	1997	1998	1999	2000	2001	2002	2003
1 India	0.3	0.9	1.1	1.7	7.1	12	24	31	47	38	41	38	38	46	46	50	50	54
2 China	15	28	32	32	29	31	31	30	43	22	34	39	33	33	34	34	32	45
3 Indonesia	1.4	4.6	7.5	12	18	19	20	27	33	13	*	*	*	*	19	*	*	*
4 Nigeria	12	12	12	12	14	14	14	13	18	*	*	*	*	*	*	17	15	*
5 Bangladesh	6.7	14	18	23	23	23	25	29	33	15	21	23	26	25	25	26	29	*
6 Pakistan	1.0	1.8	—	3.8	2.0	2.8	5.2	13	17	2.5	*	—	14	5.5	*	9.2	13	*
7 Ethiopia	16	21	23	25	26	35	35	36	36	*	*	*	*	27	*	*	*	*
8 South Africa	—	—	6.1	22	70	75	81	105	118	41	69	80	91	93	91	95	106	118
9 Philippines	0.4	0.5	3.2	10	20	48	57	62	68	96	87	80	68	71	65	*	*	*
10 Kenya	53	54	50	54	52	44	47	46	46	*	*	*	*	*	48	*	*	*
11 DR Congo	43	49	46	57	56	53	58	57	63	47	*	*	57	*	*	*	*	*
12 Russian Federation	—	0.5	1.0	1.0	1.7	4.6	5.2	6.9	8.8	72	69	64	60	29	35	34	37	40
13 Viet Nam	30	60	79	83	84	83	84	88	86	60	77	*	86	84	*	*	88	*
14 UR Tanzania	55	54	51	52	50	47	46	43	43	*	*	*	*	*	*	*	*	*
15 Brazil	—	—	—	4.1	3.9	7.5	8.0	10	18	79	79	78	80	78	79	75	82	81
16 Uganda	—	—	58	58	58	50	46	46	44	49	54	*	*	*	*	*	*	*
17 Thailand	—	0.3	5.0	21	39	46	73	65	72	55	46	35	*	*	*	*	*	*
18 Mozambique	56	50	48	48	—	45	44	45	45	*	*	*	*	47	*	*	*	*
19 Zimbabwe	—	—	—	51	49	46	46	47	42	50	54	57	*	*	*	*	*	*
20 Myanmar	—	26	26	29	32	48	56	65	73	26	28	28	*	*	*	58	*	*
21 Afghanistan	—	—	2.0	5.9	5.3	9.0	14	19	18	—	—	*	*	*	*	*	*	*
22 Cambodia	40	34	44	47	53	49	47	55	60	*	42	*	*	*	*	*	*	*
High-burden countries	8.5	14	17	20	23	27	31	35	44	33	37	37	37	39	39	41	43	48
AFR	24	26	29	35	36	37	40	47	50	38	43	41	45	45	43	44	47	50
AMR	23	28	30	34	37	44	43	46	50	72	72	77	77	76	74	75	76	76
EMR	11	9.1	10	17	17	22	23	27	28	20	25	24	30	27	23	26	27	28
EUR	2.6	3.4	4.5	11	11	12	14	22	23	63	62	57	57	45	47	43	42	49
SEAR	1.5	4.2	5.6	8.2	14	18	27	33	45	30	30	30	30	37	39	42	45	49
WPR	16	28	32	33	31	37	38	39	50	37	45	48	44	44	43	43	43	52
Global	11	16	18	22	24	28	32	37	45	37	40	40	40	42	42	43	45	50

— Indicates not available.

* No additional data beyond DOTS report, either because country is 100% DOTS, or because no non-DOTS report was received.

FIGURE 16

Proportion of estimated new smear-positive (a) and of all estimated new cases (b) notified under DOTS (grey portion of bars) and non-DOTS (blue portion of bars), 2003.
 Figures indicate the number of cases (in thousands) represented by each portion of each bar.

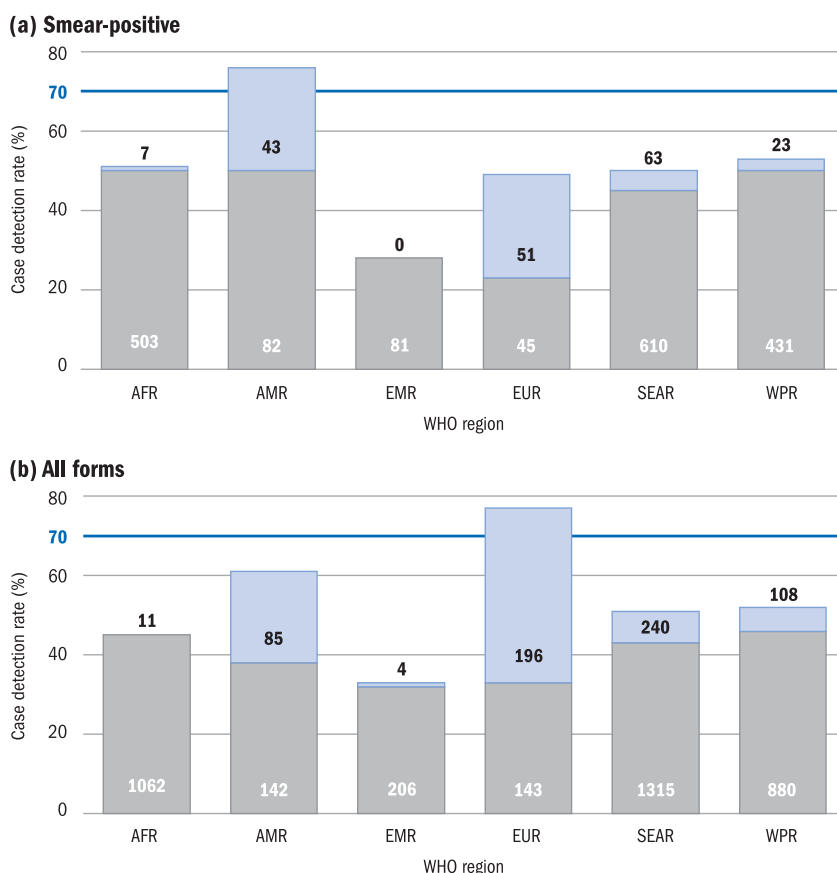
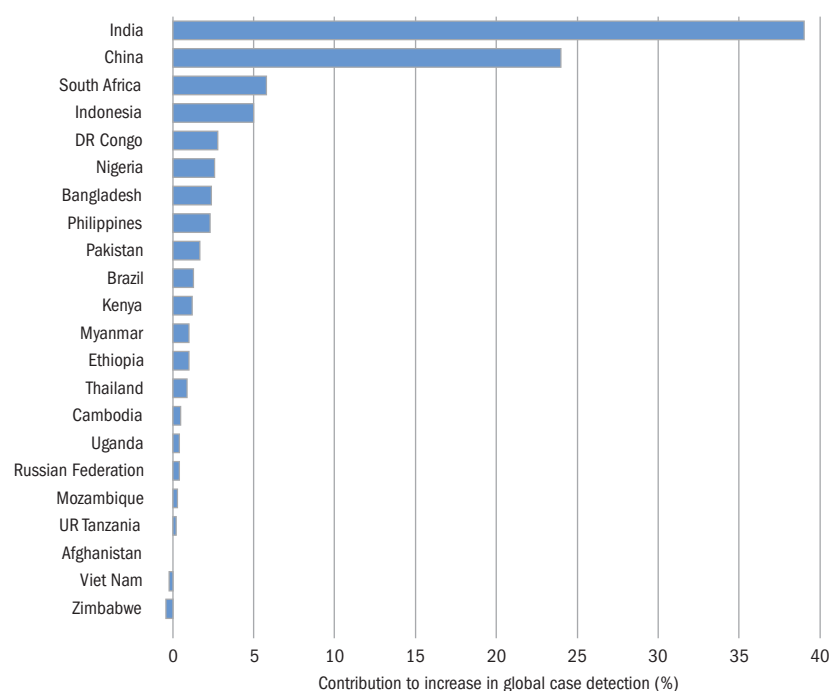


FIGURE 17

Contributions to the global increase in case detection made by high-burden countries, 2002–2003



grammes has been roughly the same in all WHO regions except the South-East Asia Region, where the acceleration in case-finding has been visible since 1998, driven mainly by DOTS expansion in India.

In the Region of the Americas, European Region and South-East Asia Region, significant numbers of smear-positive cases were reported, as usual, from outside DOTS programmes (Figure 16a). In the Region of the Americas, the estimated proportion of smear-positive cases detected from all sources exceeded 70%. Thus, the target for case detection would have been reached in this region if all patients in whom TB had been diagnosed had been treated under DOTS. There were similar differences among regions in the detection rates of all TB cases (Figure 16b).

Of the additional smear-positive cases reported by DOTS programmes in 2003 (compared with 2002), 63% were in India (39%) and China (24%; Figure 17). Although China and India have made big improvements in case detection, these two countries still account for an estimated 36% of all undetected smear-positive cases (Figure 18). They are among eight countries that together account for two thirds (67%) of all undetected cases in 2003. In order of importance, these are: India, China, Indonesia, Nigeria, Bangladesh, Pakistan, Ethiopia and the Russian Federation.

Outcomes of treatment

More than 1.4 million new sputum smear-positive cases were registered for treatment in DOTS programmes in 2002, approximately the same number that were notified that year (Table 7, Annex 2). Discrepancies between the numbers of cases notified and registered for treatment were small globally, by region and for most HBCs, the largest differences being in Kenya and the Philippines (where about 10% of notified cases were not registered for treatment) and Afghanistan (where 20% of cases registered for treatment were not notified).

The cure rate among all cases registered under DOTS was 73%, and a further 9% completed treatment (no laboratory confirmation of cure), giv-

FIGURE 18

Smear-positive TB cases undetected by DOTS programmes in six high-burden countries, 2003. Figures indicate the percentage of all cases missed globally which are missed by each country.

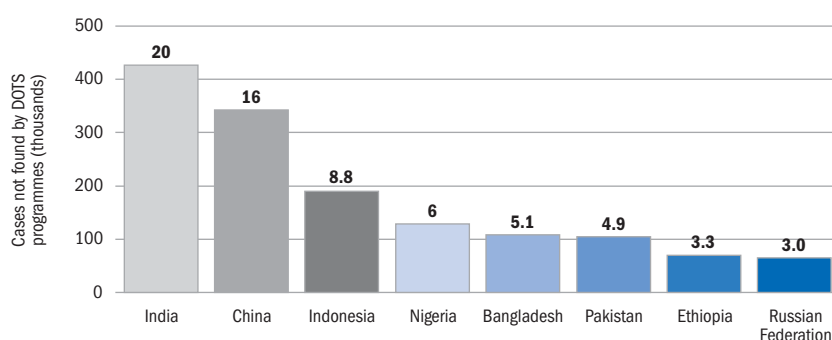


TABLE 7

Treatment outcomes for new smear-positive cases, DOTS strategy, 2002 cohort^a

	NOTIFIED ^c	REGISTERED ^d		TREATMENT OUTCOMES (%) ^b								% ESTIMATED ^f CASES SUCCESSFULLY TREATED UNDER DOTS	
		NUMBER	%	CURED	COMPLETED TREATMENT	DIED	FAILED	DEFAULTED	TRANS-FERRED	NOT EVAL ^e	TREATMENT SUCCESS (%)		
1 India	245 135	244 859	100	86	1.0	4.4	2.5	6.1	0.4	0.0	87 †	27	
2 China	180 239	180 239	100	90	2.5	1.3	0.9	1.0	1.8	2.6	93 †	28	
3 Indonesia	76 230	76 230	100	72	15	2.0	1.3	4.9	2.6	3.0	86 †	24	
4 Nigeria	19 596	20 559	105	69	10	1.7	6.7	11	1.5	0.0	79	11	
5 Bangladesh	45 741	46 811	102	81	2.9	4.7	0.7	7.0	3.5	0.2	84	25	
6 Pakistan	15 331	14 314	93	65	13	3.0	1.2	14	3.8	0.8	77	9.1	
7 Ethiopia	36 541	36 541	100	59	17	6.6	0.7	5.0	9.8	1.7	76	27	
8 South Africa	97 656	98 090	100	54	14	8.5	1.3	13	9.3	0.0	68	71	
9 Philippines	65 148	59 453	91	77	11	2.6	1.1	5.3	2.9	0.5	88 †	49	
10 Kenya	34 337	30 966	90	65	14	4.9	0.4	8.9	6.5	0.0	79	33	
11 DR Congo	44 518	45 013	101	71	7.8	6.6	1.0	7.8	4.5	1.7	78	45	
12 Russian Federation	5 179	5 171	100	64	2.7	13	9.1	7.2	4.1	0.0	67	4.6	
13 Viet Nam	56 698	56 590	100	90	1.8	3.4	0.8	1.5	2.0	0.0	92 †	81	
14 UR Tanzania	24 136	24 136	100	76	4.3	11	0.3	4.1	4.4	0.1	80	35	
15 Brazil	4 835	4 606	95	46	29	6.2	0.3	7.8	11	0.0	75	6.9	
16 Uganda	19 088	19 098	100	30	31	6.2	0.4	19	6.6	7.3	60	27	
17 Thailand	25 593	26 559	104	69	5.3	11	1.7	9.5	4	0.0	74	50	
18 Mozambique	15 236	15 236	100	77	1.4	11	1.3	7.4	2.3	0.3	78	35	
19 Zimbabwe	15 941	15 941	100	62	5.6	11	0.1	6.6	15	0.0	67	32	
20 Myanmar	24 162	23 922	99	71	10	5.4	1.9	9.2	2.4	0.0	81	52	
21 Afghanistan	6 509	7 780	120	60	27	4.0	1.8	4.7	2.6	0.0	87 †	20	
22 Cambodia	17 258	17 396	101	89	3.0	3.8	0.3	2.4	1.1	0.0	92 †	51	
High-burden countries	1 075 107	1 069 510	99	76	7.0	4.6	1.5	6.2	3.3	1.0	83	29	
AFR	442 729	437 873	99	60	13	7.2	1.4	11	6.6	1.4	73	31	
AMR	82 312	78 180	95	64	17	4.8	1.0	5.4	3.4	4.3	81	38	
EMR	74 450	74 799	100	72	12	3.1	1.4	7.8	2.6	1.5	84	22	
EUR	43 112	40 307	93	63	13	6.2	6.2	5.9	2.2	3.1	76	16	
SEAR	449 615	451 162	100	81	4.3	4.4	2.1	6.3	1.5	0.5	85 †	28	
WPR	340 666	339 754	100	84	6.2	2.4	1.0	2.3	2.3	1.5	91 †	35	
Global (DOTS)	1 432 884	1 422 075	99	73	8.7	4.8	1.6	6.7	3.4	1.4	82	30	

^a Cases diagnosed during 2002 and treated/followed-up through 2003.

^b See Table 2 and accompanying text for definitions of treatment outcomes.

^c For AMR and EUR, the regional total of notified cases includes the number of laboratory confirmed (as opposed to smear-positive) cases for one country: USA and Israel, respectively.

^d If the number registered was provided, this (or the sum of the outcomes, if greater) was used as the denominator for calculating treatment outcomes. If the number registered was missing, then the number notified (or the sum of the outcomes, if greater) was used as the denominator. The number used as the denominator is shown in column labelled "Registered".

^e Eval: evaluated.

^f Estimated: estimated number of cases for 2002 (as opposed to notified or registered).

† Treatment success ≥85%.

TABLE 8

Treatment outcomes for new smear-positive cases, non-DOTS strategy, 2002 cohort^a

	TREATMENT OUTCOMES (%) ^a										
	NOTIFIED	REGISTERED ^a	REGST'D (%)	CURED	COMPLETED TREATMENT ^a	DIED	FAILED	DEFAULTED	TRANS-FERRED	NOT EVAL	TREATMENT SUCCESS (%)
1 India	150 698	41 368	27	41	17	1.5	1.4	30	9.3	0.0	58
2 China	14 733	13 681	93	85	7.4	1.1	1.0	2.4	1.2	2.2	92 †
3 Indonesia	–	–	–	–	–	–	–	–	–	–	–
4 Nigeria	2 340	–	–	–	–	–	–	–	–	–	–
5 Bangladesh	1 070	–	–	–	–	–	–	–	–	–	–
6 Pakistan	934	–	–	–	–	–	–	–	–	–	–
7 Ethiopia	–	–	–	–	–	–	–	–	–	–	–
8 South Africa	1 143	1 239	108	59	6.2	5.4	2.4	13	8.2	5.6	65
9 Philippines	–	–	–	–	–	–	–	–	–	–	–
10 Kenya	–	–	–	–	–	–	–	–	–	–	–
11 DR Congo	–	–	–	–	–	–	–	–	–	–	–
12 Russian Federation	22 686	–	–	–	–	–	–	–	–	–	–
13 Viet Nam	–	–	–	–	–	–	–	–	–	–	–
14 UR Tanzania	–	–	–	–	–	–	–	–	–	–	–
15 Brazil	36 536	24 246	66	24	57	5.9	0.3	12	0.6	0.0	81
16 Uganda	–	–	–	–	–	–	–	–	–	–	–
17 Thailand	–	–	–	–	–	–	–	–	–	–	–
18 Mozambique	–	–	–	–	–	–	–	–	–	–	–
19 Zimbabwe	–	–	–	–	–	–	–	–	–	–	–
20 Myanmar	–	–	–	–	–	–	–	–	–	–	–
21 Afghanistan	–	–	–	–	–	–	–	–	–	–	–
22 Cambodia	–	–	–	–	–	–	–	–	–	–	–
High-burden countries	203 140	80 534	35	44	27	2.8	1.0	20	5.3	0.5	71
AFR	11 714	9 332	80	42	22	10	7.8	10	8.5	0.8	63
AMR	49 603	30 985	62	29	49	5.8	0.5	13	2.0	0.5	78
EMR	1 323	334	25	28	49	1.5	0.6	15	4.8	0.0	78
EUR	40 450	8 622	21	47	21	4.4	4.5	6.6	0.7	15	69
SEAR	157 115	43 784	28	42	17	1.6	1.5	28	9.0	0.1	59
WPR	31 442	18 982	60	64	9.9	1.9	1.4	2.0	12	8.7	74
Global (non-DOTS)	291 647	112 039	38	43	25	3.7	2.0	16	6.9	2.9	68

– Indicates not available.

^a See notes for Table 7.

ing a reported, overall treatment success rate of 82%. An estimated 30% of all smear-positive cases arising in 2002 were treated successfully by DOTS programmes. In non-DOTS areas, the quality of reporting was worse: only four HBCs provided data for the 2002 cohort (Table 8).

By WHO region, the documented treatment success rates by DOTS programmes varied from 73% in the African Region to 85% in the South-East Asia Region and 91% in the Western Pacific Region, the latter two regions having met the 85% target (Table 7, Figure 19). Fatal outcomes were most common in the African Region (7%), where a higher fraction of cases are HIV-positive, and in the European Region (6%), where a higher fraction of cases are drug resistant

(eastern Europe), or occur among the elderly (western Europe). Treatment interruption (default) was most frequent in the African Region (11%) and the Eastern Mediterranean Region (8%). Transfer without follow-up was also especially high in the African Region (7%). Treatment failure was conspicuously high in the European Region (6%), mainly because a high proportion of patients in eastern Europe are recorded as failures.

DOTS treatment success exceeded 85% in seven HBCs (Table 7). It was under 70% in the Russian Federation, South Africa, Uganda and Zimbabwe. Treatment results for individual African countries once again point to the effects of HIV: cohort death rates were 9% or more in Mozambique, South Africa, the United Republic of

(a) DOTS

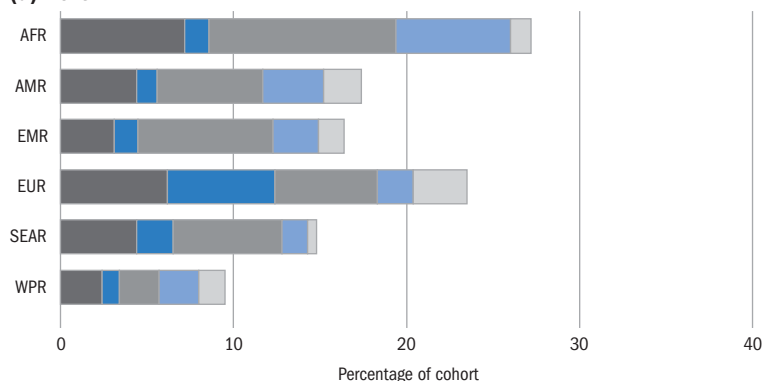
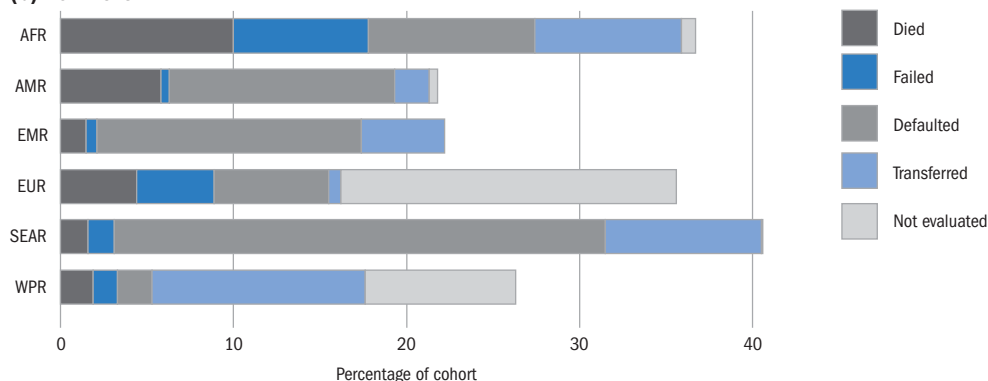


FIGURE 19

Outcomes for those patients not successfully treated in (a) DOTS and (b) non-DOTS areas, by WHO region, 2002 cohort. The true outcome of treatment is unknown for a high proportion of patients in non-DOTS areas.

(b) Non-DOTS



Legend for Figure 19:
 Died (dark grey)
 Failed (blue)
 Defaulted (medium grey)
 Transferred (light blue)
 Not evaluated (lightest grey)

TABLE 9
Treatment success for new smear-positive cases (%), 1994–2002 cohorts^a

	DOTS PROGRAMMES									WHOLE COUNTRY								
	1994	1995	1996	1997	1998	1999	2000	2001	2002	1994	1995	1996	1997	1998	1999	2000	2001	2002
1 India	83	79	79	82	84	82	84	85	87	*	25	21	18	27	21	77	54	83
2 China	94	96	96	96	97	96	95	96	93	91	93	94	95	95	95	93	95	92
3 Indonesia	94	91	81	54	58	50	87	86	86	*	*	*	*	*	*	*	*	*
4 Nigeria	65	49	32	73	73	75	79	79	79	*	*	*	*	*	*	*	*	*
5 Bangladesh	73	71	72	78	80	81	83	84	84	*	*	63	73	77	79	81	83	*
6 Pakistan	74	70	–	67	66	70	74	77	77	69	*	–	*	23	*	*	*	*
7 Ethiopia	74	61	73	72	74	76	80	76	76	*	*	71	*	*	74	*	*	*
8 South Africa	–	–	69	73	74	60	66	65	68	78	58	61	68	72	57	63	61	68
9 Philippines	80	–	82	83	84	87	88	88	88	88	60	35	78	71	*	*	*	*
10 Kenya	73	75	77	65	77	78	80	80	79	*	*	*	*	*	79	*	*	*
11 DR Congo	71	80	48	64	70	69	78	77	78	72	74	48	64	*	*	*	*	*
12 Russian Federation	–	65	62	67	68	65	68	67	67	–	*	57	*	*	*	*	*	*
13 Viet Nam	91	91	90	85	93	92	92	93	92	*	89	89	85	92	92	*	*	*
14 UR Tanzania	80	73	76	77	76	78	78	81	80	*	*	*	*	*	*	*	*	*
15 Brazil	–	–	–	–	91	89	73	67	75	70	17	20	27	40	78	71	55	80
16 Uganda	–	–	33	40	62	61	63	56	60	–	44	*	*	*	*	*	*	*
17 Thailand	–	–	78	62	68	77	69	75	74	58	64	*	58	*	*	*	*	*
18 Mozambique	67	39	54	67	–	71	75	77	78	*	*	55	65	–	*	*	*	*
19 Zimbabwe	–	–	–	–	70	73	69	71	67	52	53	32	69	*	*	*	*	*
20 Myanmar	–	66	79	82	82	81	82	81	81	77	67	79	*	*	*	*	*	*
21 Afghanistan	–	–	–	45	33	87	86	84	87	–	–	–	*	*	86	85	*	*
22 Cambodia	84	91	94	91	95	93	91	92	92	*	*	*	*	*	*	*	*	*
High-burden countries	87	83	78	81	83	81	84	84	83	83	53	50	56	62	60	81	72	83
AFR	59	62	57	63	70	69	72	71	73	60	60	56	64	70	68	71	70	72
AMR	77	77	81	81	80	83	81	83	81	65	50	51	58	67	79	77	72	80
EMR	82	87	86	79	76	83	83	83	84	79	79	66	73	56	79	81	83	84
EUR	68	69	72	72	76	77	77	75	76	67	67	58	72	63	75	75	72	75
SEAR	80	74	77	72	72	73	83	84	85	66	33	31	29	40	34	79	63	83
WPR	90	91	93	93	95	94	92	93	91	87	80	72	91	92	91	90	91	90
Global	77	79	77	79	81	80	82	82	82	75	57	54	60	64	64	80	73	81

– Indicates not available.

* No additional data beyond DOTS report, either because country is 100%, or because no non-DOTS report was received.

^a See notes for Table 7.