

<病原細菌検出状況、由来ヒト・2013年4月3日現在報告数>

検体採取月別 (地研・保健所)-1

(2013年4月3日現在累計)

	2011年				2012年					
	9月	10月	11月	12月	1月	2月	3月	4月	5月	6月
Verotoxin-producing <i>E.coli</i>	178	117 (1)	116	38	21	13	10	10	39 (1)	139
Enterotoxigenic <i>E.coli</i>	61	3 (1)	2 (1)	-	2	-	-	-	2	19 (1)
Enteropathogenic <i>E.coli</i>	6	4	5	6	4	2	-	2	4	5
Enterococcal <i>E.coli</i>	-	-	-	-	3	4	3 (1)	-	2	6 (2)
Other diarrheagenic <i>E.coli</i>	1	3	-	1	-	1	5 (2)	4	11	10 (4)
<i>Salmonella</i> Typhi	-	1	-	-	-	-	-	2 (2)	1	-
<i>Salmonella</i> Paratyphi A	-	1 (1)	1 (1)	-	-	1	1 (1)	2 (1)	1	-
<i>Salmonella</i> O4	24	25	14	9	13	4	6	10	20	25
<i>Salmonella</i> O7	29	27	8	11	14	6	8	3	15	22
<i>Salmonella</i> O8	7	14	5	8	6	2	2	1	8	26
<i>Salmonella</i> O9	58	52	30	11	6	4	3	11	11	12
<i>Salmonella</i> O3,10	1	3	-	-	-	-	1 (1)	1	1	-
<i>Salmonella</i> O1,3,19	-	-	-	-	1	-	-	-	-	-
<i>Salmonella</i> O11	-	-	-	-	-	-	-	-	-	-
<i>Salmonella</i> O13	-	1	-	-	-	-	1	-	-	1
<i>Salmonella</i> O16	1	-	-	-	-	-	1	-	-	-
<i>Salmonella</i> O17	-	1	-	-	-	-	-	-	-	-
<i>Salmonella</i> O18	-	-	1	-	1	1	-	2	-	-
<i>Salmonella</i> O35	-	-	-	-	-	-	-	-	-	-
<i>Salmonella</i> O39	-	-	-	1	-	-	-	-	-	-
<i>Salmonella</i> group unknown	1	-	-	1	-	-	1	1	1	-
<i>Vibrio cholerae</i> O1:El Tor Ogawa,CT+	-	-	-	1 (1)	-	-	-	-	1 (1)	-
<i>Vibrio cholerae</i> O1:El Tor Inaba,CT+	1	-	-	-	-	-	-	-	-	-
<i>Vibrio cholerae</i> non-O1&O139	-	2	-	-	-	-	-	-	-	-
<i>Vibrio parahaemolyticus</i>	12	-	1	-	-	-	-	-	8	4
<i>Vibrio fluvialis</i>	1	-	-	-	-	-	-	-	-	-
<i>Vibrio furnissii</i>	-	-	-	-	-	-	-	-	-	-
<i>Aeromonas sobria</i>	-	-	-	1	-	-	-	-	-	-
<i>Plesiomonas shigelloides</i>	-	-	-	-	-	-	-	-	-	-
<i>Campylobacter jejuni</i>	77	50	46	39	45	50	51 (14)	55	68	84
<i>Campylobacter coli</i>	9	3	6	-	-	1	3	2	27	7
<i>Staphylococcus aureus</i>	44	47	24	46	10	13	31	40	21	19
<i>Clostridium perfringens</i>	10	91	79	8	28	2	8	4	3	42
<i>Clostridium botulinum</i> A	-	1	1	-	-	-	-	-	-	-
<i>Bacillus cereus</i>	5	1	-	1	-	-	-	2	1	2
<i>Listeria monocytogenes</i>	-	-	-	-	-	-	-	1	-	-
<i>Yersinia enterocolitica</i>	2	-	-	-	-	1	-	-	-	3
<i>Shigella dysenteriae</i> 4	-	-	-	-	-	-	-	-	-	-
<i>Shigella flexneri</i> 1b	-	-	1	-	-	-	-	-	-	-
<i>Shigella flexneri</i> 2a	-	-	-	1 (1)	-	1	2 (2)	-	-	-
<i>Shigella flexneri</i> 2b	-	-	-	-	-	2	2	-	-	-
<i>Shigella flexneri</i> 3a	1	1	-	-	1	1 (1)	-	-	-	-
<i>Shigella flexneri</i> 4a	-	1 (1)	-	-	-	-	-	-	-	-
<i>Shigella flexneri</i> 6	-	-	-	-	-	-	1 (1)	-	-	-
<i>Shigella flexneri</i> other serovars	1	-	-	-	-	-	-	-	1	-
<i>Shigella flexneri</i> untypable	1	-	-	-	-	-	-	-	-	-
<i>Shigella boydii</i> 4	-	-	-	-	-	-	-	-	-	-
<i>Shigella boydii</i> 19	-	-	-	-	-	-	-	1 (1)	-	-
<i>Shigella sonnei</i>	32 (7)	7 (4)	3 (3)	3 (1)	3 (2)	2 (2)	22 (2)	-	2 (1)	-
<i>Kudoa septempunctata</i>	1	-	-	-	-	-	1	-	1	-
<i>Streptococcus</i> group A	13	24	32	61	74	58	81	55	27	60
<i>Streptococcus</i> group B	1	1	2	4	2	2	2	3	-	3
<i>Streptococcus</i> group C	-	-	-	-	-	-	-	-	-	-
<i>Streptococcus</i> group G	1	-	5	2	3	6	-	1	-	2
<i>Streptococcus</i> other groups	-	-	-	-	-	-	-	-	-	-
<i>S.dysgalactiae</i> subsp. <i>equisimilis</i>	1	-	-	-	-	-	-	-	-	1
<i>Streptococcus</i> group unknown	-	-	1	-	-	-	-	-	-	-
<i>Streptococcus pneumoniae</i>	21	15	18	18	8	16	16	5	8	10
<i>Bordetella pertussis</i>	13	8	7	3	4	2	6	11	58	44
<i>Clostridium tetani</i>	-	-	-	-	-	-	1	-	-	-
<i>Legionella pneumophila</i>	5	4	2	-	-	-	-	-	2	4
<i>Mycobacterium tuberculosis</i>	-	-	3	-	60	38	35	10	34	29
<i>Mycobacterium bovis</i>	-	-	-	-	-	-	1	-	-	-
MAC	-	-	-	-	-	-	-	-	1	-
<i>Mycoplasma pneumoniae</i>	40	36	50	46	35	18	17	12	20	28
<i>Haemophilus influenzae</i> non-b	9	10	15	12	7	2	3	10	9	7
<i>Klebsiella pneumoniae</i>	1	-	-	-	-	-	-	-	1	-
<i>Neisseria meningitidis</i>	-	-	-	-	-	1	-	-	-	-
<i>Enterococcus faecalis</i>	-	-	-	3	-	-	1	-	-	-
<i>Enterococcus faecium</i>	-	-	2	1	-	-	-	-	-	-
<i>Enterococcus gallinarum</i>	-	1	-	-	-	-	1	-	-	-
<i>Enterococcus casseliflavus</i>	-	-	-	-	-	-	-	-	-	-
<i>Pseudomonas aeruginosa</i>	-	-	-	-	-	-	-	-	-	-
<i>Leptospira interrogans</i>	-	-	-	-	-	-	-	-	-	-
<i>Cryptococcus neoformans</i>	-	-	-	-	-	-	-	-	-	-
合計	669 (7)	555 (8)	480 (5)	336 (3)	351 (2)	254 (3)	327 (24)	261 (4)	409 (3)	614 (7)

(): 輸入例再掲

検体採取月別 (地研・保健所)-2

(2013年4月3日現在累計)

2012年					2013年			合計	
7月	8月	9月	10月	11月	12月	1月	2月		
170	259	192 (1)	101	62	44	10	30 (2)	1549 (5)	Verotoxin-producing <i>E.coli</i>
3	5	25	5	-	2	-	-	129 (3)	Enterotoxigenic <i>E.coli</i>
7	1	6	2	7	6	2	-	69	Enteropathogenic <i>E.coli</i>
3	1	2	7	6	1	5	1	44 (3)	Enteroggregative <i>E.coli</i>
-	6	7	46	3	6	13	1	118 (6)	Other diarrheagenic <i>E.coli</i>
-	3	1 (1)	-	-	-	2 (2)	1 (1)	11 (6)	<i>Salmonella</i> Typhi
-	-	-	1 (1)	-	2 (2)	-	1 (1)	11 (8)	<i>Salmonella</i> Paratyphi A
23	31	26	18	16	13	5	4	286	<i>Salmonella</i> O4
25	51	26 (1)	29	9	9	7	2	301 (1)	<i>Salmonella</i> O7
17	35	17	26	14	-	2	2	192	<i>Salmonella</i> O8
8	17	41	30	8	8	-	1	311	<i>Salmonella</i> O9
-	2	-	1	1	3	-	-	14 (1)	<i>Salmonella</i> O3,10
-	-	-	1	-	-	-	-	2	<i>Salmonella</i> O1,3,19
-	1	-	-	-	-	-	-	1	<i>Salmonella</i> O11
1	1	-	-	-	-	-	-	5	<i>Salmonella</i> O13
-	-	-	-	-	-	-	-	2	<i>Salmonella</i> O16
-	-	-	-	-	-	-	-	1	<i>Salmonella</i> O17
-	-	-	-	1	-	-	-	6	<i>Salmonella</i> O18
1	-	-	-	-	-	-	-	1	<i>Salmonella</i> O35
-	-	-	-	1	-	-	-	2	<i>Salmonella</i> O39
1	4	-	2	-	1	-	-	13	<i>Salmonella</i> group unknown
1 (1)	-	-	-	-	-	-	-	3 (3)	<i>Vibrio cholerae</i> O1:El Tor Ogawa,CT+
-	-	-	-	-	-	-	-	1	<i>Vibrio cholerae</i> O1:El Tor Inaba,CT+
1	-	-	-	-	-	-	-	3	<i>Vibrio cholerae</i> non-O1&O139
-	7	11	-	-	-	-	1	44	<i>Vibrio parahaemolyticus</i>
-	-	-	-	-	-	-	-	1	<i>Vibrio fluvialis</i>
-	1	-	-	-	-	-	-	1	<i>Vibrio furnissii</i>
-	-	-	-	-	-	-	-	1	<i>Aeromonas sobria</i>
-	1	-	-	-	-	-	-	1	<i>Plesiomonas shigelloides</i>
102	75	65	65	58	42	27	19	1018 (14)	<i>Campylobacter jejuni</i>
7	1	2	1	5	-	1	1	76	<i>Campylobacter coli</i>
16	48	26	40	28	17	8	26	504	<i>Staphylococcus aureus</i>
60	62	49	17	-	7	1	1	472	<i>Clostridium perfringens</i>
-	-	-	-	-	-	-	-	2	<i>Clostridium botulinum</i> A
-	1	7	2	2	-	-	-	24	<i>Bacillus cereus</i>
-	1	-	-	-	-	-	-	2	<i>Listeria monocytogenes</i>
1	22	4	1	-	-	2	1	37	<i>Yersinia enterocolitica</i>
-	-	-	1 (1)	-	-	-	-	1 (1)	<i>Shigella dysenteriae</i> 4
-	1 (1)	-	-	-	-	1 (1)	-	3 (2)	<i>Shigella flexneri</i> 1b
-	-	-	-	-	-	-	-	4 (3)	<i>Shigella flexneri</i> 2a
-	-	-	-	-	-	1 (1)	-	5 (1)	<i>Shigella flexneri</i> 2b
-	1	-	-	-	-	-	-	5 (1)	<i>Shigella flexneri</i> 3a
-	-	-	-	-	-	-	-	1 (1)	<i>Shigella flexneri</i> 4a
-	-	-	-	-	-	-	-	1 (1)	<i>Shigella flexneri</i> 6
-	-	-	-	-	1	-	-	3	<i>Shigella flexneri</i> other serovars
-	-	1 (1)	-	-	-	-	-	2 (1)	<i>Shigella flexneri</i> untypable
1	-	-	-	-	-	-	-	1	<i>Shigella boydii</i> 4
-	-	-	-	-	-	-	-	1 (1)	<i>Shigella boydii</i> 19
1	1 (1)	13 (8)	2 (2)	3 (2)	2 (2)	1 (1)	2	99 (38)	<i>Shigella sonnei</i>
-	-	-	-	-	-	-	-	3	<i>Kudoa septempunctata</i>
26	18	17	18	41	56	36	36	733	<i>Streptococcus</i> group A
3	3	1	7	-	1	-	1	36	<i>Streptococcus</i> group B
-	-	-	-	-	2	-	-	2	<i>Streptococcus</i> group C
-	-	2	1	1	1	2	-	27	<i>Streptococcus</i> group G
-	-	-	-	2	1	-	-	3	<i>Streptococcus</i> other groups
1	-	-	1	1	-	-	-	5	<i>S.dysgalactiae</i> subsp. <i>equisimilis</i>
-	-	-	-	-	-	-	-	1	<i>Streptococcus</i> group unknown
8	8	4	7	8	8	10	1	189	<i>Streptococcus pneumoniae</i>
18	42	11	11	5	1	-	3	247	<i>Bordetella pertussis</i>
-	-	-	-	-	-	-	-	1	<i>Clostridium tetani</i>
5	-	1	5	5	3	-	-	36	<i>Legionella pneumophila</i>
32	1	1	1	-	-	5	5	254	<i>Mycobacterium tuberculosis</i>
-	-	-	-	-	-	-	-	1	<i>Mycobacterium bovis</i>
-	-	-	-	-	-	-	-	1	MAC
42	87	55	51	43	52	30	6	668	<i>Mycoplasma pneumoniae</i>
7	5	2	1	3	2	6	1	111	<i>Haemophilus influenzae</i> non-b
-	-	1	-	10	-	-	-	13	<i>Klebsiella pneumoniae</i>
1	-	-	-	-	-	2	-	4	<i>Neisseria meningitidis</i>
1	1	-	-	-	-	-	-	6	<i>Enterococcus faecalis</i>
1	1	-	-	-	-	-	1	6	<i>Enterococcus faecium</i>
-	1	-	-	-	-	-	-	3	<i>Enterococcus gallinarum</i>
-	1	-	-	-	-	-	-	1	<i>Enterococcus casseliflavus</i>
-	-	1	-	-	46	-	-	47	<i>Pseudomonas aeruginosa</i>
-	-	-	-	1	-	-	-	1	<i>Leptospira interrogans</i>
1	-	-	-	-	-	-	-	1	<i>Cryptococcus neoformans</i>
595 (1)	807 (2)	617 (12)	501 (4)	344 (2)	337 (4)	179 (5)	148 (4)	7784 (100)	合計

(): 輸入例再掲

報告機関別 (地研・保健所) 2013年2月検体採取分 (2013年4月3日現在)

	秋田県	福島県	さいたま市	東京都	神奈川県	横浜市	川崎市	横須賀市	新潟県	新潟市	石川県	山梨県	長野県	静岡県	滋賀県
Verotoxin-producing <i>E.coli</i>	-	-	-	1	-	4	-	-	4 (1)	5	5	-	1	-	-
Enterogastric <i>E.coli</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Other diarrheagenic <i>E.coli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Salmonella</i> Typhi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salmonella</i> Paratyphi A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salmonella</i> O4	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-
<i>Salmonella</i> O7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Salmonella</i> O8	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<i>Salmonella</i> O9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Vibrio parahaemolyticus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Campylobacter jejuni</i>	-	-	-	1	2	2	-	-	-	-	-	-	-	-	3
<i>Campylobacter coli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Staphylococcus aureus</i>	-	-	-	-	-	3	-	5	-	-	-	-	-	8	-
<i>Clostridium perfringens</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Yersinia enterocolitica</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Shigella sonnei</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Streptococcus</i> group A	18	6	-	-	5	4	-	-	-	-	-	-	-	-	-
<i>Streptococcus</i> group B	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Streptococcus pneumoniae</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Bordetella pertussis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mycobacterium tuberculosis</i>	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
<i>Mycoplasma pneumoniae</i>	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Haemophilus influenzae</i> non-b	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Enterococcus faecium</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
合計	19	8	1	5	7	21	1	6	5 (1)	5	5	2	1	9	5

Salmonella血清型内訳

O4 Typhimurium	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
O4 Schwarzengrund	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
O4 Others	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
O7 Infantis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
O7 Choleraesuis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O8 Corvallis	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
O9 Enteritidis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

A群溶レン菌T型内訳

T1	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-
T2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T4	1	3	-	-	1	3	-	-	-	-	-	-	-	-	-
T12	6	-	-	-	3	-	-	-	-	-	-	-	-	-	-
T28	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
TB3264	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Untypable	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-

(): 輸入例再掲

臨床診断名別 (地研・保健所) 2013年2月～3月累計 (2013年3月31日現在)

	細菌性赤痢	腸管出血性大腸菌感染症	腸チフス	パラボラチフス	レジオネラ症	劇症型溶レン菌感染症	A群溶レン菌咽頭炎	感染性胃腸炎	百日咳	マイコプラズマ肺炎	食中毒	その他	合計
Verotoxin-producing <i>E.coli</i>	-	32	-	-	-	-	-	-	-	-	-	-	32
Enteropathogenic <i>E.coli</i>	-	-	-	-	-	-	-	3	-	-	-	-	3
Enterogastric <i>E.coli</i>	-	-	-	-	-	-	-	7	-	-	-	-	7
<i>Salmonella</i> Typhi	-	-	1	-	-	-	-	-	-	-	-	-	1
<i>Salmonella</i> Paratyphi A	-	-	-	1	-	-	-	-	-	-	-	-	1
<i>Salmonella</i> O4	-	-	-	-	-	-	-	-	-	-	-	1	1
<i>Campylobacter jejuni</i>	-	-	-	-	-	-	-	-	-	-	6	-	6
<i>Campylobacter coli</i>	-	-	-	-	-	-	-	1	-	-	-	-	1
<i>Staphylococcus aureus</i>	-	-	-	-	-	-	-	-	-	-	-	5	5
<i>Clostridium perfringens</i>	-	-	-	-	-	-	-	-	-	-	-	1	1
<i>Yersinia pseudotuberculosis</i>	-	-	-	-	-	-	-	-	-	-	-	1	1
<i>Shigella flexneri</i> 2a	3	-	-	-	-	-	-	-	-	-	-	-	3
<i>Shigella sonnei</i>	2	-	-	-	-	-	-	-	-	-	-	-	2
<i>Streptococcus pyogenes</i>	-	-	-	-	-	-	12	-	-	-	-	-	12
<i>Streptococcus agalactiae</i>	-	-	-	-	-	1	1	-	-	-	-	-	2
<i>Streptococcus</i> group G	-	-	-	-	-	1	-	-	-	-	-	-	1
<i>Bordetella pertussis</i>	-	-	-	-	-	-	-	-	4	-	-	-	4
<i>Legionella pneumophila</i>	-	-	-	-	1	-	-	-	-	-	-	-	1
<i>Mycoplasma pneumoniae</i>	-	-	-	-	-	-	-	-	-	5	-	2	7
合計	5	32	1	1	1	2	13	11	4	5	6	10	91

* 「病原体個票」により臨床診断名が報告された例を集計
診断名は感染症発生動向調査対象疾病+食中毒

報告機関別 (つづき) (2013年4月3日現在)

京 都 市	神 戸 市	広 島 市	高 知 県	福 岡 県	宮 崎 県	合 計	
-	-	-	-	2 (1)	8	30 (2)	Verotoxin-producing <i>E.coli</i>
-	-	-	-	-	-	1	Enterogaagregative <i>E.coli</i>
-	-	-	-	-	-	1	Other diarrheagenic <i>E.coli</i>
1 (1)	-	-	-	-	-	1 (1)	<i>Salmonella</i> Typhi
1 (1)	-	-	-	-	-	1 (1)	<i>Salmonella</i> Paratyphi A
-	-	-	-	-	1	4	<i>Salmonella</i> O4
-	-	-	-	-	1	2	<i>Salmonella</i> O7
-	-	-	-	-	-	2	<i>Salmonella</i> O8
-	-	-	-	-	-	1	<i>Salmonella</i> O9
-	1	-	-	-	-	1	<i>Vibrio parahaemolyticus</i>
-	3	8	-	-	-	19	<i>Campylobacter jejuni</i>
-	-	-	1	-	-	1	<i>Campylobacter coli</i>
-	10	-	-	-	-	26	<i>Staphylococcus aureus</i>
-	-	-	-	-	-	1	<i>Clostridium perfringens</i>
-	-	-	-	-	-	1	<i>Yersinia enterocolitica</i>
-	-	-	-	1	-	2	<i>Shigella sonnei</i>
2	-	-	1	-	-	36	<i>Streptococcus</i> group A
-	-	-	-	-	-	1	<i>Streptococcus</i> group B
-	-	-	-	-	-	1	<i>Streptococcus pneumoniae</i>
-	-	1	1	-	1	3	<i>Bordetella pertussis</i>
-	-	-	-	-	-	5	<i>Mycobacterium tuberculosis</i>
-	-	-	4	-	-	6	<i>Mycoplasma pneumoniae</i>
-	-	-	-	-	-	1	<i>Haemophilus influenzae</i> non-b
-	-	-	-	-	-	1	<i>Enterococcus faecium</i>
4 (2)	14	9	7	3 (1)	11	148 (4)	合計

Salmonella 血清型内訳

-	-	-	-	-	-	2	O4 Typhimurium
-	-	-	-	-	-	1	O4 Schwarzengrund
-	-	-	-	-	1	1	O4 Others
-	-	-	-	-	-	1	O7 Infantis
-	-	-	-	-	1	1	O7 Choleraesuis
-	-	-	-	-	-	2	O8 Corvallis
-	-	-	-	-	-	1	O9 Enteritidis

A群溶レン菌T型内訳

-	-	-	1	-	-	7	T1
1	-	-	-	-	-	1	T2
1	-	-	-	-	-	1	T3
-	-	-	-	-	-	8	T4
-	-	-	-	-	-	9	T12
-	-	-	-	-	-	2	T28
-	-	-	-	-	-	5	TB3264
-	-	-	-	-	-	3	Untypable

(): 輸入例再掲

海外渡航先別 2013年2月～3月累計 (2013年3月31日現在)

	イ ン	カ シ	シ タ	台 湾	中 華 人 民 共 和 国	フ ン	マ ン	フ ン	ペ ー	ボ ー	オ ー	グ ー	例 数
地研・保健所													
Verotoxin-producing <i>E.coli</i>	-	-	1	-	-	-	-	-	1	1	-	-	2
<i>Salmonella</i> Typhi	-	-	-	-	-	1	-	-	-	-	-	-	1
<i>Salmonella</i> Paratyphi A	1	-	-	-	-	-	-	-	-	-	-	-	1
Influenza virus B/Yamagata	-	-	-	-	-	-	-	1	-	-	-	-	1
Measles virus genotype H1	-	-	-	-	-	1	-	-	-	-	-	-	1
Rubella virus genotype 2B	-	-	-	-	-	-	-	-	-	-	-	1	1
Dengue virus 1	1	-	1	-	1	-	-	-	-	-	-	-	3
Dengue virus 2	-	-	-	1	-	-	1	-	-	-	-	-	1
Chikungunya virus	-	1	-	-	-	-	-	-	-	-	-	-	1
Norovirus genogroup I	-	-	1	-	-	-	-	-	-	-	-	-	1
検疫所													
Dengue virus NT	-	1	-	-	-	-	-	-	-	-	-	-	1
Dengue virus 2	-	1	-	1	-	-	1	-	-	-	-	1	1
Chikungunya virus	-	2	-	-	1	-	-	-	-	-	-	-	2

* 「病原体個票」により渡航先が報告された例を集計
2つ以上の国/地域へ渡航した例、記載された国から来日した輸入例を含む
NT:未同定

報告機関別(つづき)

(2013年3月31日現在)

Table with columns for reporting institutions (e.g., 浜松市, 愛知県, 名古屋市, etc.) and rows for various pathogens (e.g., Picorna NT, Echo 3, Influenza A, Rotavirus, Adenovirus, Herpes simplex, etc.).

NT:未同定

臨床診断別 2012年10月～2013年3月累計

(2013年3月31日現在)

Table with columns for clinical diagnosis names and counts for various symptoms like cough, fever, and specific infections. Includes a '合計' (Total) row at the bottom.

診断名は感染症発生動向調査対象疾病+食中毒 NT:未同定

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<THE TOPIC OF THIS MONTH>

Rubella and Congenital Rubella Syndrome in Japan, as of March 2013

The principal symptoms of rubella are fever, rash and lymphadenopathy. As some cases show only a part of these symptoms and as not a few other diseases show similar symptoms, definitive diagnosis requires laboratory data. The virus when infecting a pregnant woman within 20 weeks of gestation occasionally causes congenital rubella syndrome (CRS) in newborns such as cataract, congenital heart disease (very frequently patent ductus arteriosus), hearing loss, low birth weight, thrombocytopenic purpura etc. (Note, however, that more than 40% of infected fetuses develop CRS.) To avoid such consequences, preventive measures including vaccination are necessary (pp. 92, 93, 95 & 97 of this issue).

The National Epidemiological Surveillance of Infectious Diseases (NESID): Rubella had been a sentinel surveillance infectious disease before 2008, when it was classified as a Category V infectious disease requiring notification of all the cases (IASR 32: 250-251, 2011) (<http://www.mhlw.go.jp/bunya/kenkou/kekkaku-kansenshou11/01-05-14-02.html>).

Until recently nationwide epidemics used to occur every five years, e.g., 1982, 1987-1988, and 1992-1993. Since April 1995 when rubella vaccine to children of both sexes was included in the routine immunization in, no nationwide epidemic has been reported (IASR 21: 1-2, 2000 & 24: 53-54, 2003, <http://idsc.nih.go.jp/iasr/24/277/graph/f2771.gif>). The 2004 epidemic was regionally limited but accompanied with estimatedly 39,000 cases. However, in 2011 after 7 years of silence, rubella cases started to increase (Fig. 1), and reported number during the weeks 1-12 of 2013 exceeded the total number in 2012. Considering the possibility that some patients failed to consult doctors or to be properly diagnosed, the reported number can be a low estimate (p. 100 of this issue).

Large cities reported more cases (Fig. 2 on p. 89) (pp. 101 & 102 of this issue), and the weekly report in 2013 indicated spread of rubella from the Metropolitan areas to its surrounding prefectures (<http://www.nih.go.jp/niid/images/idsc/disease/rubella/2013pdf/rube13-13.pdf>).

As for age distribution in 2013, most frequent were those in 30's (33%) followed by those in 20's (28%), 40's (21%), ≥50 years (8.0%), 15-19 years (5.5%) and <15 years (4.8%). Thus, adults occupied about 90% of the patients. Among males, the most frequent were those in 20-40's, while among females the most frequent were those in 20's (Fig. 3). Ratio of male patients to female patients was 3.0 in 2012 and was 3.7 in the first 14 weeks of 2013. The gender ratio appears increasing. Vaccination history was zero for 29% and unknown for 65% of the total cases.

CRS was classified as a Category V infectious disease requiring notification of

Figure 1. Weekly cases of rubella, week 1 of 2010-week 14 of 2013, Japan

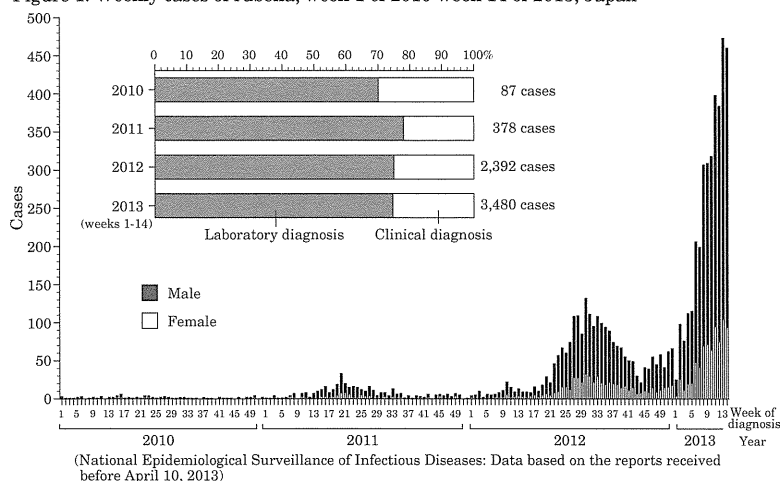
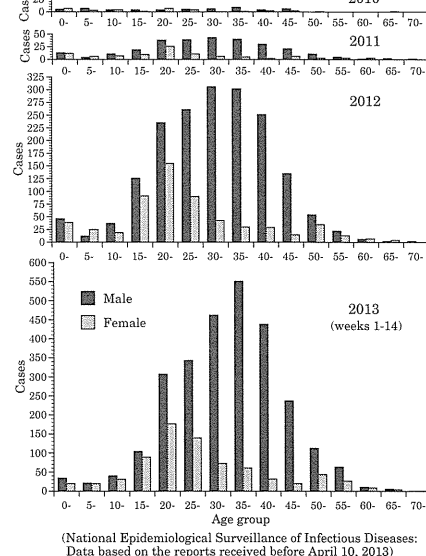


Figure 3. Age distribution of rubella cases by gender, 2010-2013, Japan



(Continued on page 88)

(THE TOPIC OF THIS MONTH-Continued)

all the cases (<http://www.mhlw.go.jp/bunya/kenkou/kekkaku-kansenshou11/01-05-10.html>). Since enforcement of the Infectious Diseases Control Law in April 1999, 27 CRS cases have been reported in Japan (pp. 95 & 97 of this issue), 10 cases from the 2003-2004 epidemic and 8 cases from the 2012 epidemic (Table 1 on p. 89). Among these incidents, 19 mothers were diagnosed as rubella during pregnancy. Only one case had a clear vaccination record of the mother. Eight cases reported from the week 42 of 2012 to the week 12 of 2013 were all infected in Japan and many of them were from prefectures that reported rubella cases at frequencies higher than 10 per million population in 2012.

Transition of vaccination schedule: The 2012-2013 rubella epidemic that principally affected age groups 20's-40's can be explained firstly by vaccination schedule from August 1977 focusing on female students (Group 2 in Table 2 on p. 89) and males born in FY1962-FY1979 were not included in the junior high school immunization.

In 1994, Preventive Vaccination Law was amended to the effect that the mass vaccination was replaced by strongly recommended vaccination on individual basis. The target population was set to 12-90 months old boys and girls (Group 5 in Table 2). Male and female junior high school students were given the first chance of vaccination during the period of FY1995-FY2001 (Group 3 in Table 2), but the coverage of this age cohort was low on account of requirement of accompaniment of a guardian for immunization (<http://www.mhlw.go.jp/topics/bcg/other/5.html>).

In FY2006, the one dose rubella vaccination was replaced by the two dose measles-rubella (MR) combined vaccine immunization, the first at one year of age and the second within 1 year before primary school entrance. In addition, as a 5 year program from FY2008 to FY2012, the second chance of immunization was given to the children in the first year class of junior high schools and those in the third year class of the high schools. However, the coverage of the latter cohort was found low in prefectures, which reported higher number of rubella cases (p. 103 of this issue).

Antibody prevalence rate among the population (National Epidemiological Surveillance of Vaccine Preventable Diseases): Fourteen prefectural public health institutes in Japan jointly surveyed rubella hemagglutination inhibition (HI) antibody level of 5,094 healthy individuals (Fig. 4). The percentage of antibody positives (HI titer ≥ 8 HI) was 30% among zero year babies, increased in one year children and attained $\geq 90\%$ in ≥ 2 year children.

Among adults in their 30's and 40's, antibody positive rate was 73-86% in males in contrast to 97-98% in females (11-25 point lower in males than in females). However, there was little gender gap among people in 20's and ≥ 50 years of age (p. 105 of this issue).

Woman whose antibody level is found lower than HI titer ≤ 16 in the prenatal checkups are advised to receive MR vaccine on an earliest occasion after the delivery in preparation to the next possible pregnancy (p. 93 of this issue).

Rubella virus and laboratory diagnosis: There are 13 genotypes specified by the E1 protein coding gene. In Japan, the dominant genotype including that of the 2004 epidemic was genotype 1j, which was replaced in 2011 by genotypes 1E and 2B of the South-, East- and Southeast-Asia origins (pp. 91, 95, 96, 97 & 99) (<http://www.nih.go.jp/niid/en/iasr-rubella-e.html>).

Laboratory diagnosis of rubella consists of virus isolation/identification or PCR detection of viral genome from throat swab, blood or urine specimens from the acute phase patients, detection of IgM antibody in the serum of acute phase, or increase of antibody titer in the serum of recovery phase compared with the acute phase. Currently, 70-80% of the reported rubella cases are laboratory diagnosed (Fig. 1). The IgM test, while widely used, often gives false negative data if the specimen is obtained earlier than three days after appearance of rash. Therefore, PCR test is recommended for earlier diagnosis (pp. 96 & 97 of this issue). The most sensitive is the PCR test using throat swabs obtained on the next day of the rash appearance. When the PCR test is done with the blood samples, however, it may become negative several days after appearance of rash.

HI antibody test uses goose red blood cells. In case of short supply of goose red blood cells, EIA can be used by converting EIA titer to HI titer by using the conversion table proposed by the Ministry of Health Labour and Welfare (MHLW) working group (pp. 93 & 107 of this issue).

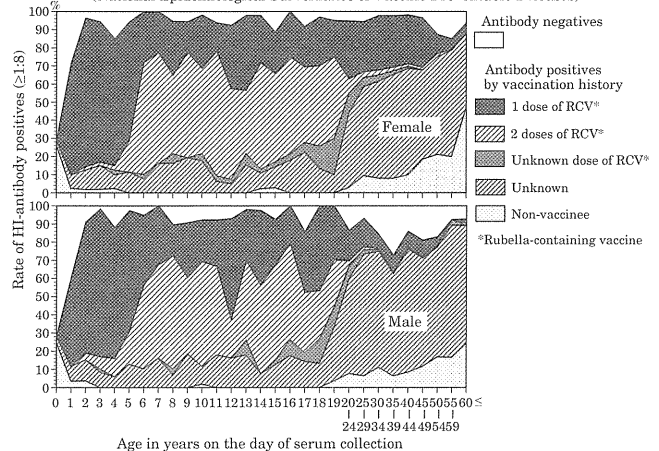
Challenges in future: MHLW issued a notice "Strengthening Measures for Prevention and Control of Rubella and Congenital Rubella Syndrome" on January 29, 2013 and partially revised on February 26, 2013 (<http://www.nih.go.jp/niid/en/iasr-sp/2250-related-articles/related-articles-398/3427-de3981.html>). National Institute of Infectious Diseases and MHLW, supported by academic societies, made campaign posters for rubella control and sent them to local governments and medical institutions in Japan (<http://www.nih.go.jp/niid/ja/rubella-poster2013.html>).

Currently, in order to provide correct information on CRS, consulting services are provided to obstetricians and gynecologists by the Research Group of MHLW (p.93 of this issue).

Technical Advisory Group to Western Pacific Regional Office of WHO has recommended inclusion of rubella vaccine in the routine immunization particularly to countries which have not yet done so. It also recommended to maintain the vaccine coverage $\geq 80\%$ (p. 91 of this issue).

As of the week 14 of 2013, rubella incidence in Japan was 28 cases per million population, and 8 CRS cases have been reported since October 2012. As the peak season of rubella is often early summer, the rubella patients are expected to increase from now. Once pregnant, women cannot receive the live rubella vaccine on account of potential infection to the fetus. Therefore necessary information including MR vaccination prior to conception should be provided to every woman who is planning to bear a baby and to her husband and family members. For further improvement of rubella control, it is important to provide adults with chance of receiving rubella vaccine, which may require collaboration with various stakeholders including industry physicians.

Figure 4. Rubella antibody prevalence by age and gender, 2012, Japan (National Epidemiological Surveillance of Vaccine-Preventable Diseases)



The statistics in this report are based on 1) the data concerning patients and laboratory findings obtained by the National Epidemiological Surveillance of Infectious Diseases undertaken in compliance with the Law Concerning the Prevention of Infectious Diseases and Medical Care for Patients of Infections, and 2) other data covering various aspects of infectious diseases. The prefectural and municipal health centers and public health institutes (PHIs), the Department of Food Safety, the Ministry of Health, Labour and Welfare, and quarantine stations, have provided the above data.

Infectious Disease Surveillance Center, National Institute of Infectious Diseases
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Nationwide Rubella Epidemic — Japan, 2013

Rubella usually is a mild, febrile rash illness in children and adults; however, infection early in pregnancy, particularly during the first 16 weeks, can result in miscarriage, stillbirth, or an infant born with birth defects (i.e., congenital rubella syndrome [CRS]) (1). As of 2013, goals to eliminate rubella have been established in two World Health Organization regions (the Region of the Americas by 2010 and the European Region by 2015), and targets for accelerated rubella control and CRS prevention have been established by the Western Pacific Region (WPR) (2). In 1976, Japan introduced single-antigen rubella vaccine in its national immunization program, targeting girls in junior high school. In 1989, a measles-mumps-rubella (MMR) vaccine was introduced, targeting children aged 12–72 months. However, adult males remain susceptible to rubella. From January 1 to May 1, 2013, a total of 5,442 rubella cases were reported through the rubella surveillance system in Japan, with the majority (77%) of cases occurring among adult males. Ten infants with CRS were reported during October 2012–May 1, 2013. Countries and regions establishing a goal of accelerated control or elimination of rubella should review their previous and current immunization policies and strategies to identify and vaccinate susceptible persons and to ensure high population immunity in all cohorts, both male and female.

During 1999–2007, rubella surveillance in Japan consisted of aggregate case reporting to the pediatric sentinel surveillance system. Cases were reported from a representative sample of approximately 3,000 pediatric inpatient and outpatient medical facilities. In January 2008, the sentinel surveillance systems were replaced by nationwide case-based surveillance for rubella, and all physicians were required to report any clinically diagnosed or laboratory-confirmed rubella case* to local health

*Rubella case definition: clinically diagnosed rubella case is a diffuse punctate and maculopapular rash, fever, and lymphadenopathy; laboratory-confirmed rubella case is the presence of all of the mentioned signs and one of the following: 1) isolation of the virus or detection of viral RNA from blood, throat, or cerebrospinal fluid samples by reverse transcription–polymerase chain reaction; or 2) detection of rubella-specific immunoglobulin M antibodies from a serum sample or a significant increase in rubella-specific immunoglobulin G antibody titers in paired serum samples obtained at acute and convalescent phases.

officials. In April 1999, nationwide, case-based surveillance for CRS[†] had been established.

Until the early 2000s, rubella was endemic in Japan, with periodic epidemics approximately every 5 years and seasonal increases in the spring and summer. The number of reported rubella cases remained at record low levels until 2010, and in 2011, a few outbreaks were reported in the workplace among adult males. In

[†]Laboratory-confirmed CRS case definition: 1) clinically confirmed CRS in an infant who has a positive blood test for rubella-specific immunoglobulin M or hemagglutination inhibition antibody levels sustained or higher than expected from passively transferred maternal antibody; or 2) detection of rubella virus in specimens from throat, saliva, or urine. CRS is clinically confirmed if an infant has 1) at least two of the following complications: cataract, congenital glaucoma, congenital heart disease, hearing impairment, or pigmentary retinopathy; or 2) one of those complications and one of the following complications: purpura, splenomegaly, microcephaly, meningoencephalitis, radiolucent bone disease, or jaundice developed within 24 hours after birth.

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2012, the number of rubella cases sharply increased to 2,392, with the rise in cases continuing into 2013 (Figure 1). From January 1 to May 1, 2013, a total of 5,442 rubella cases were reported (Table). Of these cases, 3,936 (72.3%) were laboratory confirmed. Geographically, over 60% of rubella cases were reported from Kanto area, in the eastern part of Japan comprised of Tokyo and its surrounding prefectures. In recent weeks, the epidemic has expanded from Kanto to other parts of Japan, including Osaka, Hyogo, Aichi, Fukuoka, and Kagoshima. Of the 5,442 cases, males accounted for 4,213 cases (77.4%), of which 3,878 cases (92.0%) were in persons aged >20 years (Figure 2). Of the 4,834 cases in persons aged >20 years, 1,727 (36%) were in persons aged 30–39 years and 1,535 (32%) in persons aged 20–29 years. Among rubella cases, vaccination history was unknown in a majority of cases (3,538 [65%]). For the 1,904 reported rubella cases with known vaccination status, 1,566 (82%) occurred in persons who had not received rubella vaccine (Table). Virus genotypes were determined for 150 cases in 2012; of these, 123 (82.0%) and 26 (17.0%) were genotypes 2B and 1E, respectively (3).

During 2008–2011, three cases of CRS were reported nationwide. Since October 2012, 10 CRS cases have been reported from Hyogo (two), Aichi (two), Osaka (two), Tokyo (one), Kagawa (one), Saitama (one), and Kanagawa (one). Six of the mothers of infants with CRS had not received rubella vaccine, and four had unknown vaccination history.

Population immunity is measured by administrative coverage and seroprevalence surveys. In 2011, administrative measles-rubella (MR) vaccine coverage was 95.3% at age 1 year,

92.8% at age 5–6 years, 88.1% at age 12–13 years, and 81.4% at age 17–18 years. Population immunity for eight vaccine-preventable diseases is measured by the National Epidemiological Surveillance of Vaccine Preventable Diseases, an annual, national seroepidemiologic survey conducted among a representative sample of the Japanese population. In 2012, 14 prefectures in Japan joined this serologic survey by measuring rubella hemagglutination inhibition antibody levels in 5,094 healthy persons. Among adults aged 30–50 years, seropositivity for rubella antibody (1:8) was 73%–86% among males and 97%–98% among females (4).

In response to the current outbreak, Japan's Ministry of Health, Labor, and Welfare provided guidance to health-care authorities (5). The guidance is to provide information on rubella disease and CRS for pregnant women and their households and encouraged vaccination of the family members of pregnant women (because rubella vaccine is contraindicated in pregnant women) and vaccination for women who plan to get pregnant. The local governments in approximately 100 cities, including several districts in the Tokyo metropolitan area that had high numbers of reported rubella cases, have provided partial funding to help with the cost of MR vaccine or a single rubella vaccine for women planning pregnancy and for men who are living with a pregnant woman. In addition, mass media agencies in Japan have provided information about the rubella epidemic, including rubella disease and CRS, which has helped increase awareness about the importance of rubella vaccination.

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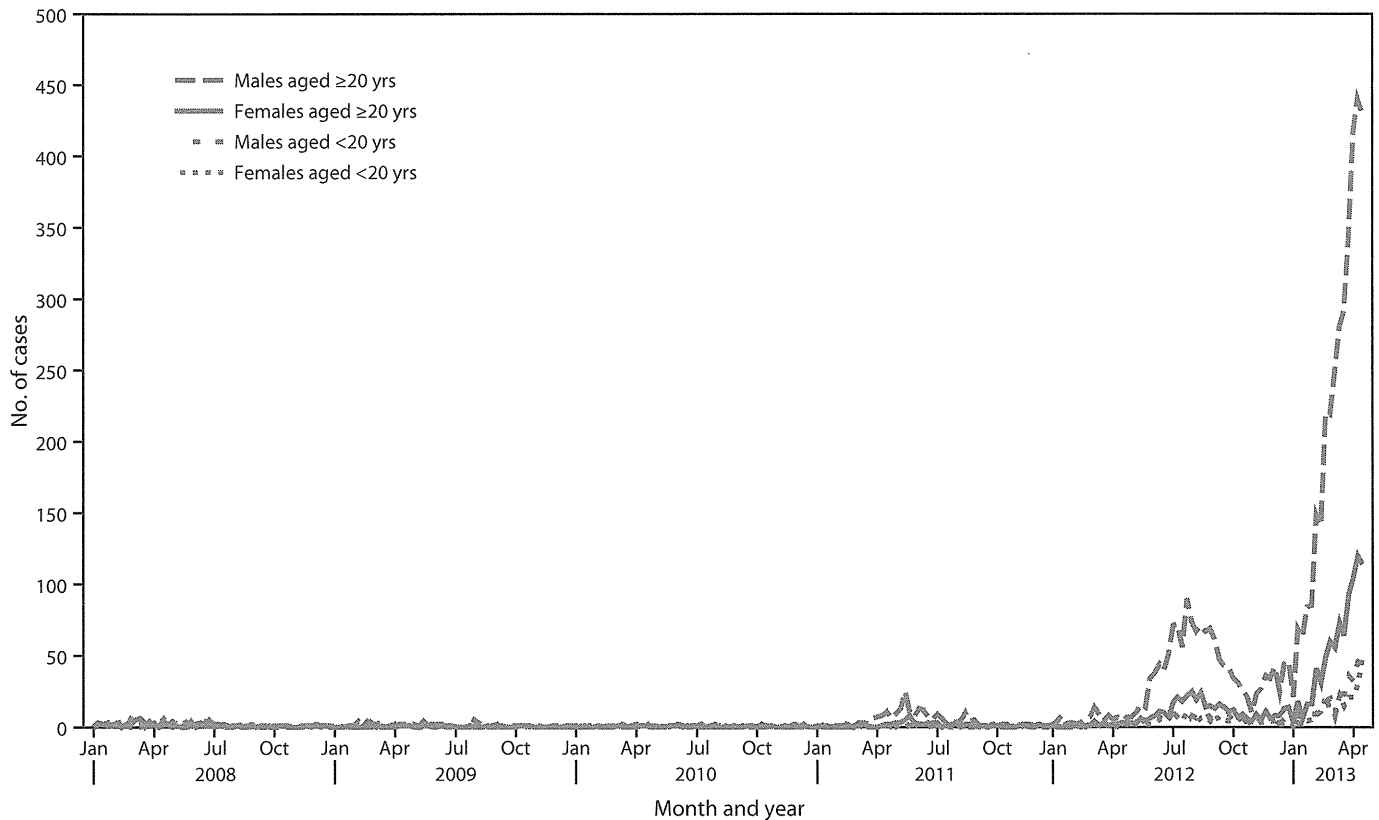
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FIGURE 1. Number of rubella cases, by sex and age group — Japan, 2009–2013*



* As of April 24, 2013.

Reported by

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Editorial Note

The primary purpose of rubella vaccination is to prevent congenital rubella virus infection, including CRS. In WPR, the Immunization Technical Advisory Group endorsed a regional accelerated rubella control and CRS prevention goal to decrease rubella incidence to <10 cases per million population and CRS incidence to <10 cases per million live births each year by 2015 (6). In 2012, Japan reported 18.7 rubella cases per million population, a rate higher than the WPR annual incidence target. As of May 2013 (4 months into the year), the number of reported rubella cases is already double the total number of cases in 2012.

In 1976, Japan established a goal to prevent CRS and introduced single-antigen rubella vaccine in its national immunization program, targeting girls in junior high school. In 1989, an MMR vaccine was introduced, targeting children aged 12–72 months, but this combination vaccine was withdrawn in 1993 after reports of aseptic meningitis related to the mumps component. In 1995, vaccination policy was changed to make all vaccines strongly recommended but not mandatory, and in 2006, the MR combined vaccine was introduced, with a 2-dose schedule administered at 1–2 years and 5–7 years.

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TABLE. Number and percentage of rubella cases, by year and selected characteristics — Japan, 2009–2013

Characteristic	2009		2010		2011		2012		2013*	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Total	147	(100)	87	(100)	378	(100)	2,392	(100)	5,442	(100)
Rubella cases per 1,000,000 population	1.2		0.7		3.0		18.7		42.5	
Sex										
Male	98	(66.7)	54	(62.1)	278	(73.5)	1,797	(75.1)	4,213	(77.4)
Female	49	(33.3)	33	(37.9)	100	(26.5)	595	(24.9)	1,229	(22.6)
Age group (yrs)										
<1	4	(2.7)	1	(1.1)	2	(0.5)	16	(0.7)	24	(0.4)
1–4	22	(15.0)	11	(12.6)	23	(6.1)	69	(2.9)	94	(1.7)
5–9	13	(8.8)	10	(11.5)	10	(2.6)	37	(1.5)	68	(1.2)
10–14	17	(11.6)	8	(9.2)	18	(4.8)	56	(2.3)	118	(2.2)
15–19	19	(12.9)	5	(5.7)	29	(7.7)	217	(9.1)	304	(5.6)
20–29	22	(15.0)	20	(23.0)	114	(30.2)	741	(31.0)	1,535	(28.2)
30–39	30	(20.4)	16	(18.4)	94	(24.9)	681	(28.5)	1,727	(31.7)
40–49	13	(8.8)	14	(16.1)	59	(15.6)	430	(18.0)	1,103	(20.3)
50–59	4	(2.7)	1	(1.1)	22	(5.8)	124	(5.2)	396	(7.3)
>59	3	(2.0)	1	(1.1)	7	(1.9)	21	(0.9)	73	(1.3)
Diagnosis										
Clinically diagnosed	63	(42.9)	26	(29.9)	83	(22.0)	599	(25.0)	1,506	(27.7)
Laboratory confirmed	84	(57.1)	61	(70.1)	295	(78.0)	1,793	(75.0)	3,936	(72.3)
Vaccination status										
Unvaccinated	46	(31.3)	17	(19.5)	96	(25.4)	605	(25.3)	1,566	(28.8)
Once	41	(27.9)	14	(16.1)	29	(7.7)	180	(7.5)	263	(4.8)
Twice	4	(2.7)	4	(4.6)	9	(2.4)	49	(2.0)	75	(1.4)
Uncertain	56	(38.1)	52	(59.8)	244	(64.6)	1,558	(65.1)	3,538	(65.0)
Total CRS* cases	2	(100)	0	—	1	(100)	5	(100)	5	(100)
CRS cases per 1,000,000 live births	2.0		0.0		1.0		4.8		4.8	

Abbreviation: CRS = congenital rubella syndrome.

* As of May 1, 2013.

What is already known about this topic?

Congenital rubella syndrome (CRS) is caused by fetal infection with rubella virus from the mother and is characterized by birth defects such as hearing impairment, heart defects, and cataracts. Several countries that initially vaccinated only adolescent or adult women, then later introduced rubella vaccine into their routine programs or conducted mass campaigns in adolescent and adult females, have experienced large rubella outbreaks among adolescent and young adult males, with a concomitant increase in infants with CRS.

What is added by this report?

In 2012, the number of rubella cases in Japan sharply increased to 2,392, with the rise in cases continuing into 2013 and resulting in a cumulative total of 5,442 cases from January 1 to May 1, 2013. Of these cases, 72% were laboratory confirmed, and 23% were in females. Since October 2012, 10 CRS cases have been reported.

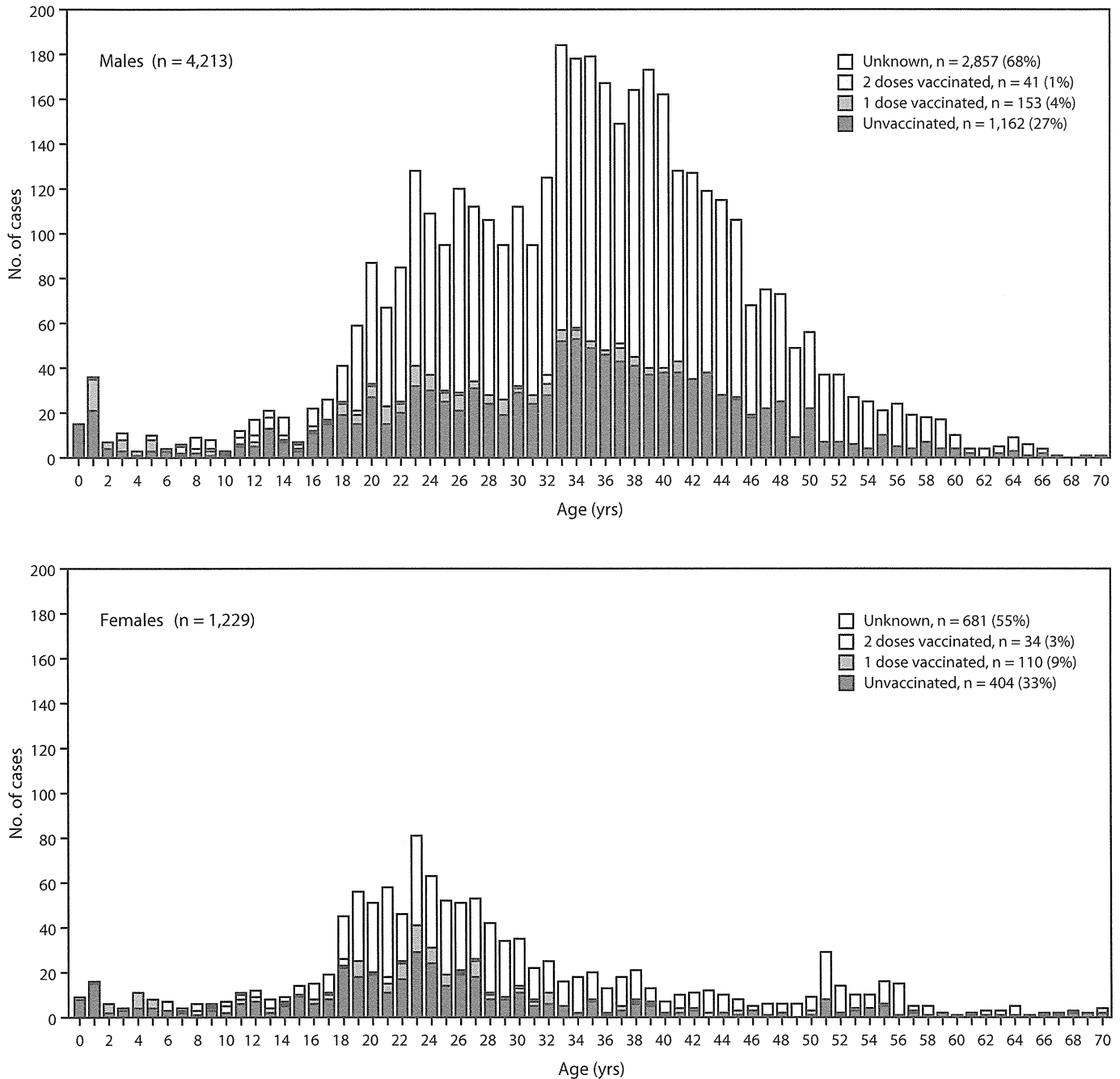
What are the implications for public health practice?

Countries using rubella vaccine should aim to prevent rubella outbreaks (i.e., achieve and maintain interruption of rubella virus transmission) by ensuring high rubella immunity across all age groups (both males and females). In cohorts born since the introduction of rubella vaccine, this immunity is achieved primarily through uniformly high vaccination coverage.

After a large measles outbreak in 2007 and 2008, a catch-up MR vaccination program was implemented, targeting two age cohorts (those aged 12 years and those aged 17 years) each year during 2008–2013 to ensure high population immunity among persons aged 12–22 years in 2013.

In the current outbreak, males aged 20–39 years, who were not included in the initial rubella vaccination program, accounted for 68% of the reported cases. However, with the introduction of 2 doses of MR vaccine into the national vaccination schedule in 2006 for both boys and girls and the successful catch-up vaccination program, children who currently are aged <15 years account for only 5.6% of the cases. In other countries (e.g., Brazil, Chile, and Argentina), where only adolescent or adult females have been targeted through national immunization programs or as part of mass vaccination campaigns, similar large outbreaks have occurred among adolescent and adult males, with a concomitant increase in CRS cases. These types of outbreaks emphasize that national immunization programs should ensure high levels of immunity in all cohorts born since the introduction of rubella vaccine (both males and females) either through the routine program or high-quality mass campaigns that are sufficient to interrupt rubella virus transmission

FIGURE 2. Number of rubella cases among males and females, by age and vaccination history — Japan, surveillance week 1 to 17, 2013*



* As of May 1, 2013.

and prevent CRS cases. In addition, programs should implement high-quality, case-based rubella and CRS surveillance and respond promptly and rapidly to outbreaks.

The effects of this outbreak have been wide-ranging, both within Japan and internationally. In the Region of the Americas, where endemic rubella virus transmission has been

interrupted, importations have occurred in the United States and Canada in 2013. The international spread of rubella virus from Japan provides a reminder that countries in regions that have eliminated rubella need to maintain high levels of vaccination coverage and high-quality surveillance to limit the spread and detect imported rubella virus.

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Update to Interim Guidance for Preexposure Prophylaxis (PrEP) for the Prevention of HIV Infection: PrEP for Injecting Drug Users

On June 12, 2013, the Thailand Ministry of Health and CDC published results from a randomized controlled trial of a daily oral dose of 300 mg of tenofovir disoproxil fumarate (TDF) that showed efficacy in reducing the acquisition of human immunodeficiency virus (HIV) infection among injecting drug users (IDUs) (1). Based on these findings, CDC recommends that preexposure prophylaxis (PrEP) be considered as one of several prevention options for persons at very high risk for HIV acquisition through the injection of illicit drugs.

Background

Among the approximately 50,000 new HIV infections acquired each year in the United States, 8% were attributed to injection-drug use in 2010 (2). The National HIV Behavioral Surveillance System, surveying IDUs in 20 U.S. cities in 2009, found high frequencies of both injection-drug use and sexual practices that are associated with HIV acquisition (3). Among IDUs without HIV infection, 34% reported having shared syringes in the preceding 12 months, and 58% reported having shared injection equipment; 69% reported having unprotected vaginal sex and 23% reported having unprotected male-female anal sex. Among HIV-uninfected male IDUs, 7% reported previous male-male anal sex, and 5% reported unprotected male-male anal sex. However, only 19% of male and female IDUs reported participating in an intervention to reduce risk behaviors. These findings underscore a need to provide effective interventions to further reduce HIV infections among IDUs in the United States.

Several clinical trials have demonstrated safety and efficacy of daily oral antiretroviral PrEP for the prevention of HIV acquisition among men who have sex with men (MSM) (4) and heterosexually active men and women (5,6), although two trials were unable to show efficacy, likely because of low adherence (7,8) (Table). CDC previously has issued interim guidance for PrEP use with MSM (9) and heterosexually active adults (10) and now provides interim guidance for PrEP use in IDUs.

During 2009–2013, CDC convened workgroup meetings and consulted with external subject matter experts, including clinicians, epidemiologists, academic researchers, health department policy and program staff members, community representatives, and HIV and substance abuse subject matter experts at federal health agencies, to 1) review the results of PrEP trials and other data as they became available and 2) deliberate and recommend content for interim guidance and comprehensive U.S. Public Health Service guidelines for

PrEP use in the United States. The expert opinions from the IDU workgroup and other workgroups were used to develop this interim guidance on PrEP use with IDUs.

Rationale and Evidence

The Bangkok Tenofovir Study enrolled HIV-uninfected persons who reported injecting illicit drugs in the prior year into a phase-III randomized, double-blind, placebo-controlled trial to determine the safety and efficacy of daily oral TDF to reduce the risk for HIV acquisition. In all, 2,413 eligible, consenting men and women aged 20–60 years were randomized to receive either daily oral doses of 300 mg of TDF ($n = 1,204$) or a placebo tablet ($n = 1,209$). Participants could elect to receive tablets daily by directly observed therapy or receive a 28-day supply of daily doses to take home; they could switch medication supply method at their monthly follow-up visits. At follow-up visits every 28 days, individualized adherence and risk-reduction counseling, HIV testing, pregnancy testing for women, and assessment for adverse events were conducted. An audio computer-assisted self-interview was conducted every 3 months to assess risk behaviors. Blood was collected at enrollment; months 1, 2, and 3; and then every 3 months for laboratory testing to screen for adverse reactions to the medication. At study clinics (operated by the Bangkok Metropolitan Administration), social services, primary medical care, methadone, condoms, and bleach (for cleaning injection equipment) were provided free of charge.

The study was conducted during 2005–2012, with a mean follow-up time of 4.6 years (maximum: 6.9 years) and a 24% loss to follow-up or voluntary withdrawal in the TDF group and a 23% loss in the placebo group. Participants took their study drug an average of 83.8% of days and were on directly observed therapy 86.9% of the time.

After enrollment, 50 patients acquired HIV infection: 17 in the TDF group and 33 in the placebo group. In the modified “intent-to-treat” analysis (excluding two participants later found to have been HIV-infected at enrollment), HIV incidence was 0.35 per 100 person-years in the TDF group and 0.68 per 100 person-years in the placebo group, representing a 48.9% reduction in HIV incidence (95% confidence interval [CI] = 9.6%–72.2%). Among those in an unmatched case-control study that included the 50 persons with incident HIV infection (case-patients) and 282 HIV-uninfected participants from four clinics (controls), detection of tenofovir in plasma was associated with a 70% reduction in the risk for HIV infection (CI = 2.3%–90.6%).

TABLE. Results from randomized, placebo-controlled, clinical trials of the efficacy of daily oral antiretroviral preexposure prophylaxis (PrEP) for preventing human immunodeficiency virus (HIV) infection

Clinical trial	Participants	Type of medication	mITT efficacy*		Adherence-adjusted efficacy based on TDF detection in blood	
			%	(95% CI)	%	(95% CI)
Bangkok Tenofovir Study Partners PrEP	Injecting drug users	TDF	49	(10–72)	70	(2–91)
	HIV discordant couples	TDF	67	(44–81)	86	(67–94)
TDF2	Heterosexually active men and women	TDF/FTC	75	(55–87)	90	(58–98)
		TDF/FTC	62	(22–83)	84	NS
iPrEx	Men who have sex with men	TDF/FTC	42	(18–60)	92	(40–99)
Fem-PrEP	Heterosexually active women	TDF/FTC	NS	—	NA	—
VOICE	Heterosexually active women	TDF	NS	—	NA	—
		TDF/FTC	NS	—	NA	—

Abbreviations: mITT = modified intent to treat analysis, excluding persons determined to have had HIV infection at enrollment; CI = confidence interval; TDF = tenofovir disoproxil fumarate; FTC = emtricitabine; NS = not statistically significant; NA = data not available.

* % reduction in acquisition of HIV infection.

The rates of adverse events, serious adverse events, deaths, grade 3–4 laboratory abnormalities, and elevated serum creatinine did not differ significantly between the two groups. Reports of nausea and vomiting were higher in the TDF group than the placebo group in the first 2 months of medication use but not thereafter. No HIV infections with mutations associated with TDF resistance were identified among HIV-infected participants.

Comparing rates at enrollment with rates at 12 months of follow-up, risk behaviors decreased significantly for injecting drugs (from 62.7% to 22.7%), sharing needles (18.1% to 2.3%), and reporting multiple sexual partners (21.7% to 11.0%), and these risk behaviors remained below baseline throughout the entire period of the trial (all three comparisons, $p < 0.001$). Rates were similar in the TDF and placebo groups.

PrEP Recommendation for IDUs

On July 16, 2012, based on the results of trials in MSM and heterosexually active women and men, the Food and Drug Administration approved a label indication for the use of the fixed dose combination of TDF 300 mg and emtricitabine (FTC) 200 mg (Truvada) as PrEP against sexual HIV acquisition by MSM and heterosexually active women and men (11). These trials did not evaluate safety and efficacy among injecting-drug users.

CDC recommends that daily TDF/FTC be the preferred PrEP regimen for IDUs for the following reasons: 1) TDF/FTC contains the same dose of TDF (300 mg) proven effective for IDUs, 2) TDF/FTC showed no additional toxicities compared with TDF alone in PrEP trials that have provided both regimens, 3) IDUs also are at risk for sexual HIV acquisition for which TDF/FTC is indicated, and 4) TDF/FTC has an approved label indication for PrEP to prevent sexual HIV acquisition in the United States. Its use to prevent parenteral

HIV acquisition in those without sexual acquisition risk is currently an “off-label” use. Reported injection practices that place persons at very high risk for HIV acquisition include sharing of injection equipment, injecting one or more times a day, and injection of cocaine or methamphetamine. CDC recommends that prevention services provided for IDUs receiving PrEP include those targeting both injection and sexual risk behaviors (12).

In all populations, PrEP use 1) is contraindicated in persons with unknown or positive HIV status or with an estimated creatinine clearance < 60 mL/min, 2) should be targeted to adults at very high risk for HIV acquisition, 3) should be delivered as part of a comprehensive set of prevention services, and 4) should be accompanied by quarterly monitoring of HIV status, pregnancy status, side effects, medication adherence, and risk behaviors, as outlined in previous interim guidance (9,10). Adherence to daily PrEP is critical to reduce the risk for HIV acquisition, and achieving high adherence was difficult for many participants in PrEP clinical trials (Table).

Comment

Providing PrEP to IDUs at very high risk for HIV acquisition could contribute to the reduction of HIV incidence in the United States. In addition, if PrEP delivery is integrated with prevention and clinical care for the additional health concerns faced by IDUs (e.g., hepatitis B and C infection, abscesses, and overdose), substance abuse treatment and behavioral health care, and social services, PrEP will contribute additional benefits to a population with multiple life-threatening physical, mental, and social health challenges (12,13). CDC, in collaboration with other federal agencies, is preparing comprehensive U.S. Public Health Service guidelines on the use of PrEP with MSM, heterosexually active men and women, and IDUs, currently scheduled for release in 2013.

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Mass Drug Administration for the Elimination of Lymphatic Filariasis — Port-au-Prince, Haiti, 2011–2012

Lymphatic filariasis (LF), also known as elephantiasis, results from mosquito-borne infection with filarial worm parasites, predominantly *Wuchereria bancrofti*, and can lead to severe disfigurement from lymphedema and hydrocele. The World Health Organization (WHO) has called for the elimination of LF using the strategy of annual mass drug administration (MDA). WHO defines adequate MDA coverage (the percentage of all residents of an endemic area who swallow the drugs) as $\geq 65\%$. By late 2011, all areas in Haiti where LF is endemic had received MDA, except Port-au-Prince, which was considered the most challenging area. The first MDA in Port-au-Prince was conducted from November 2011 through February 2012. To evaluate coverage, a stratified, three-stage cluster-sample survey was conducted. In all, 71% (95% confidence interval = 69%–74%) of persons swallowed the MDA tablets, according to their own or a proxy respondent's recall. Coverage was highest (77%) among internally displaced persons (IDPs) in camps, and $< 65\%$ in two of the remaining six survey strata (urban communes). Among the 1,976 adults asked additional questions, 88% said they heard about the MDA before it happened, 74% that they were given tablets, and 71% that they swallowed the tablets. Only 50% of those who did not hear about the MDA in advance swallowed the tablets. The MDA was a large step toward the elimination of LF in Haiti but must be followed by MDA rounds that maintain adequate coverage.

In 2010, WHO estimated that 120 million persons were infected with LF globally (1). In the Americas, Haiti is one of four countries where LF is still endemic, accounting for 78.7% of 12.4 million persons at risk in this region (2). In 2000, WHO called for the elimination of LF by 2020, based on a strategy of annual MDA with drugs that clear microfilaria, the circulating stage of the parasite in humans (3). LF elimination guidelines are based on the expectation that five consecutive annual MDA rounds, each achieving $\geq 65\%$ coverage in the total population, will result in interruption of transmission (3). By late 2011, at least one round of MDA using albendazole and diethylcarbamazine had been conducted throughout all endemic areas of Haiti except the capital, Port-au-Prince. Port-au-Prince includes the communes of Cité Soleil, Carrefour, Delmas, Pétion-Ville, Port-au-Prince, and Tabarre, and is considered the most challenging area in which to conduct an MDA (4). During November 2011–February 2012, an MDA was conducted for the first time in these communes. Based on reports of doses administered divided by the estimated population of this area, the National Program for the Elimination of Lymphatic Filariasis

estimated that 92% coverage had been achieved, varying from 79% to 160% by commune. After the MDA, a household survey was conducted by the Ministry of Public Health and Population and partners as an independent means of assessing coverage and to identify ways of increasing coverage and improving coverage evaluation of MDAs in subsequent years.

A stratified, three-stage cluster sample design was used to select households in seven strata: the IDP camps located within the six communes (one stratum) and non-IDP camp households in each of the six communes (six strata). The first-stage sampling frame for the IDP camps was a list of camps and their sizes in households from administrative records updated every 2–3 months. For non-IDP camp households, the sampling frame was a list of census enumeration areas (sections démographiques d'énumération [SDEs]), with SDE sizes in households taken from a 2011 update (without enumeration) of the 2003 national census. In all, 35 IDP camps and 30 SDEs in each of the remaining strata were selected, with probability proportional to estimated camp and SDE size. Each selected SDE and camp was divided into two or more segments of approximately equal size in households based on natural lines of division. A single segment was randomly chosen within each selected SDE and camp and survey teams then selected a systematic sample of households within the segment using a sampling interval calculated so that all households in the same stratum had the same overall probability of selection and provided the target sample size.

Within each selected household, a parent or guardian provided responses for children aged < 10 years, and this person or another adult provided responses for older children and adults who were absent. Persons asked about swallowing the tablets were first shown the tablets. A knowledge, attitudes, and practices (KAP) questionnaire was administered to persons aged ≥ 18 years who were present at the time of the survey visit. Coverage and KAP survey data were collected using questionnaires on smart phones and were cleaned and analyzed using statistical software. Children aged < 2 years, pregnant women, and severely ill persons were ineligible for treatment during the MDA. However, coverage was defined as the percentage of all persons who swallowed the tablets (3). Coverage estimates for the Port-au-Prince population as a whole (all seven strata) were calculated using sampling weights derived from the overall selection probabilities of households.

A total of 2,102 households were selected for the survey sample during the survey fieldwork, which took place during May 3–21, 2012. In 78% of these households, with a total of 6,345