


Ensuring Broad Immunization Coverage In Refugee and Immigrant Children


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NOVEMBER 1, 2018



5-year old immigrating from Cameroon, parents are refugees from the Democratic Republic of Congo. Received 2 doses MMR vaccine, 3 doses HBV vaccine, and 3 doses of IPV vaccine, all finishing by age 2 (assume appropriate intervals between doses). Plan a catch-up schedule for him.



Are there any vaccines on the schedule for the patient on the previous slide that could possibly be skipped? How would you know?



#3 also has a younger brother who is 17 months old and has had the same set of vaccines; his MMR were given at 6 and 9 months. Plan his catch-up schedule.



Learning Objectives

- ▶ Compare issues seen in unimmunized or partially immunized refugee and immigrant populations to those commonly encountered in US-born populations
- ▶ Identify specific issues sometimes encountered in refugee and immigrant populations while attempting to ensure full vaccine coverage
- ▶ Review possible solutions to these special issues with attention to both the CDC catch-up schedule and to the needs of the families
- ▶ Highlight specific vaccine-preventable diseases where risk may be elevated in certain populations based on country of origin



What our US born patients are thinking about....



What refugee parents are worried about...



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Vaccines & Vaccination Open Access

Access – a problem for both groups

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Special Issues

BCG

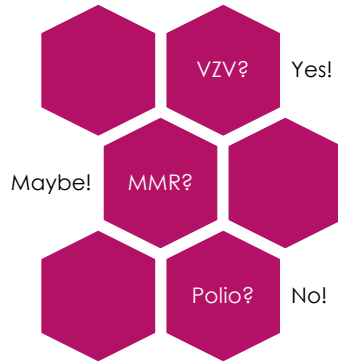
- ▶ Not especially effective
- ▶ Can cause false-positive PPD *in childhood* – but *not* by the time someone is an adult
- ▶ Provides false sense of security
- ▶ Quantiferon-Gold test is *not* altered by prior BCG vaccine but . . .
- ▶ Quantiferon cannot be done on child under 5 years old
 - ▶ PPD anyhow, use higher threshold for “positive” test in these children
- ▶ Does seem to be a promising therapy for bladder cancer....

Measles

Single Antigen Vaccine

Early MMR

Titers



Permitted Titers in PA

- Measles
- Rubella
- Varicella
- Hepatitis B



The Trouble With Titers

Waning immunity

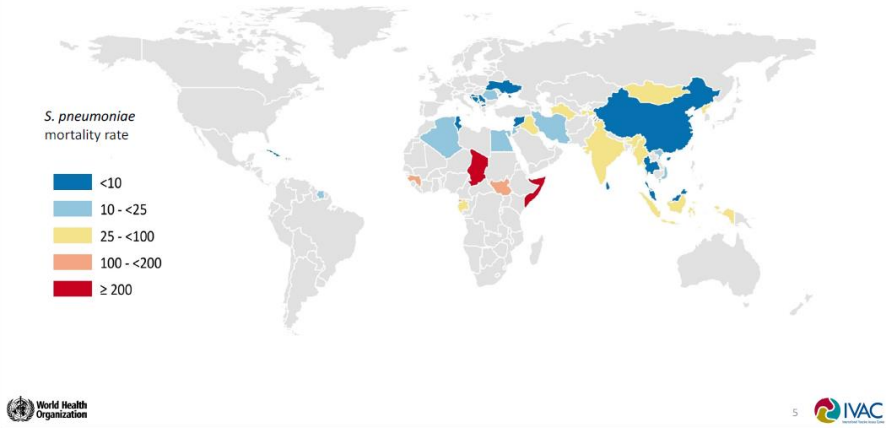
Incomplete series

Accuracy



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Few countries remain without nationwide PCV



Short Intervals



way
too
early

How to Scare Yourself...

- ▶ http://apps.who.int/immunization_monitoring/globalsummary
- ▶ Can click on any country you like and see how many cases of a given disease they've had in a particular year



Democratic Republic of the Congo (the)

Development status:	Least developed	GNI / capita (US\$):	450 ¹	Infant (under 12 months) mortality rate:	72 ²
		GDP / capita (US\$):	887 ¹	Child (under 5 years) mortality rate:	94 ²

Population data in thousands³

	2017	2016	2015	2014	2013	2000	1990	1980
Total population	81'340	78'736	76'197	73'723	71'316	47'076	34'615	26'357
Births	3'401	3'335	3'269	3'200	3'129	2'180	1'614	1'217
Surviving infants	3'177	3'111	3'043	2'974	2'903	1'946	1'433	1'065
Pop. less than 5 years	14'846	14'494	14'099	13'723	13'348	8'661	6'351	4'780
Pop. less than 15 years	37'646	36'491	35'313	34'199	33'082	21'439	15'618	11'755
Female 15-49 years	18'045	17'447	16'884	16'324	15'792	10'545	7'844	6'099

(Click for retrospective incidence data for Democratic Republic of the Congo (the))

Number of reported cases

Diphtheria	-	-	-	-	-	0	-	43
Japanese encephalitis	-	-	-	-	-	-	-	-
Measles	45'107	5'092	5'020	33'711	88'381	8'282	4'564	32'596
Mumps	-	-	-	-	-	-	-	-
Pertussis	1'602	0	0	0	-	75	-	15'335
Polio*	22	0	0	0	0	603	-	263
Rubella	-	204	464	864	1'704	-	-	-
Rubella (CRS)	1	-	-	-	-	-	-	-
Tetanus (neonatal)	253	80	330	201	-	77	120	-
Tetanus (total)**	939	80	330	201	-	77	-	848
Yellow fever	2	77	0	3	-	-	-	-

* Polio refers to all polio cases (indigenous or imported), including polio cases caused by vaccine derived polio viruses (VDPV). For disaggregated data please click on this hyperlink: <https://extranet.who.int/polis/public/CaseCount.aspx>
 It does not include cases of vaccine-associated paralytic polio (VAPP) and cases of non polio acute flaccid paralysis (AFP).
 ** Neonatal Tetanus and Total Tetanus cases equality may be the result from a lack of non-Neonatal Tetanus surveillance system.

Percentage target population vaccinated by antigen

Most recent coverage survey⁴ Official country estimates⁵ *(Click for retrospective coverage estimates data for Democratic Republic of the Congo (the))*

Vaccine	year	result	method	% card seen						
BIG	2012	83	DHS	26	92	92	86	90	95	57
DTP1	2012	81	DHS	26	99*	98	99*	99	97	49
DTP3	2012	61	DHS	26	94	92	94	93	87	40
DTP4										
IPV1					82	70	48	-	-	-
HepB_BD										
HepB3	2012	61	DHS	26	94	92	94	93	87	-
Hib3	2012	61	DHS	26	94	92	94	93	87	-

Nepal

Development status: Least developed GNI / Press F11 to exit full screen GDP / capita (PPP) 2652¹ Infant (under 12 months) mortality rate: 28² Child (under 5 years) mortality rate: 35²

Population data in thousands³

	2017	2016	2015	2014	2013	2000	1990	1980
Total population	29'305	28'983	28'656	28'323	27'985	23'741	18'749	14'902
Births	572	572	573	576	582	761	727	624
Surviving infants	556	556	556	559	564	715	655	536
Pop. less than 5 years	27'46	27'56	27'05	2'057	2'933	3'567	3'058	2'445
Pop. less than 15 years	9'053	9'182	9'329	9'463	9'607	9'731	7'956	6'170
Female 15-49 years	8'219	8'061	7'882	7'724	7'553	5'712	4'359	3'470

(Click for retrospective incidence data for Nepal)

Number of reported cases

	2017	2016	2015	2014	2013	2000	1990	1980
Diphtheria	728	140	26	1'079	103	268	7	82
Japanese encephalitis	63	98	937	1'304	118	—	—	—
Measles	66	1'269	1'599	1'279	1'951	9'397	182	561
Mumps	61'228	30'610	38'858	34'034	29'134	—	—	—
Pertussis	9'092	4'890	4'416	6'096	3'431	6'021	18	1'055
Polio*	0	0	0	0	0	29	6	52
Rubella	21	656	626	704	755	—	—	—
Rubella (CRS)	0	33	50	16	—	—	—	—
Tetanus (Neonatal)	7	7	266	57	87	134	0	—
Tetanus (total)**	880	766	888	883	377	305	35	116
Yellow fever	—	—	—	—	—	—	—	—

* Polio refers to all polio cases (indigenous or imported), including polio cases caused by vaccine derived polio viruses (VDPV). For disaggregated data please click on this hyperlink: <https://extranet.who.int/polio/public/CaseCount.aspx>
 ** Neonatal Tetanus and Total Tetanus cases equality may be the result from a lack of non-Neonatal Tetanus surveillance system.

Percentage target population vaccinated by antigen

Vaccine	Most recent coverage survey ⁴				Official country estimates ⁵			
	year	result	method	% card seen	2015	2014	2013	2012
BCG	2015	98	DHS	52	95	93	94	99
DTP1	2015	97	DHS	52	95	92	94	94
DTP3	2015	86	DHS	52	90	87	91	92
DTP4	—	—	—	—	—	—	—	—
IPV1	—	—	—	—	16	77	71	—
HepB_BD	—	—	—	—	—	—	—	—
HepB3	2015	86	DHS	52	90	87	91	92
Hib3	2015	86	DHS	52	90	87	91	92

(Click for retrospective coverage estimates data for Nepal)

Number of reported Polio cases, Syrian Arab Republic (the) 1980-2017

Number of reported cases

Year	Number of reported cases
1980	332
1981	248
1982	282
1983	43
1984	29
1985	26
1986	40
1987	38
1988	34
1989	23
1990	13
1991	24
1992	22
1993	0
1994	2
1995	0
1996	0
1997	0
1998	0
1999	0
2000	0
2001	0
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0
2016	0
2017	35

Source: WHO/UNICEF database, data reported to WHO by Member States (http://apps.who.int/immunization_monitoring/databases/members/members-reports.html) as of 13 September 2018.

WHO

Next update: Mid July 2019 WHO-UNICEF estimates⁶

Vaccine	2015	2014	2013	2012
BCG	95	93	94	99
DTP1	95	92	94	94
DTP3	90	87	91	92
DTP4	—	—	—	—
IPV1	16	77	71	—
HepB_BD	—	—	—	—
HepB3	90	87	91	92
Hib3	90	87	91	92

(Click for full retrospective WHO-UNICEF coverage estimates data for Syrian Arab Republic (the))

Sources

- ▶ CDC vaccine schedules
- ▶ PA Code regarding vaccinations for schools
- ▶ WHO Immunization Monitoring App
- ▶ 8 years experience caring for a large population of new Americans from a broad range of countries who never fail to show me something I've never seen before