



Improving vaccine coverage in hard-to-reach groups: immigrants and refugees

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Outline

- Immunisation coverage and vaccine-preventable disease risks
 - Migrants
 - Refugees
 - Travellers visiting friends and relatives
- Strategies to improve coverage among migrants, and refugees
 - Health system
 - Provider
 - Community



Australia: A nation of immigrants and travellers



10.5 million international departures in 2017 [2]
- 26% - to visit friends and relatives

Australian population

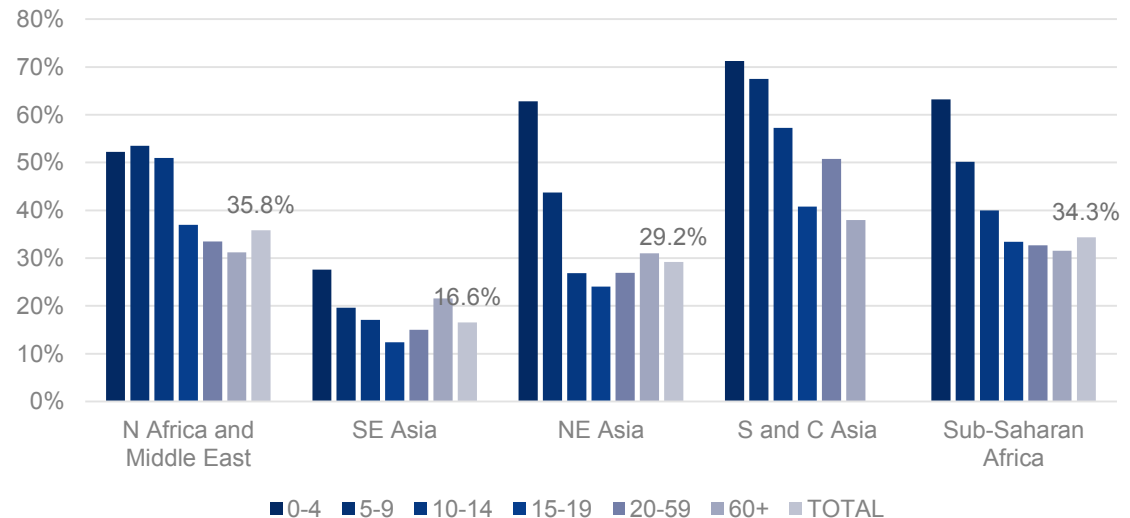
- Migrants: 28.4%
- 2nd generation (at least 1 immigrant parent): 20.9%

66% new arrivals (1997-2006) NESB [3]

Age groups (new arrivals 2004-2014)

- 0-19 years – 24%
- 20-39 years – 58%
- 40-59 – 14%
- 60+ - 4%

VFR travel as a proportion of all Australian residential departures, by age group and region, 2015 [2].

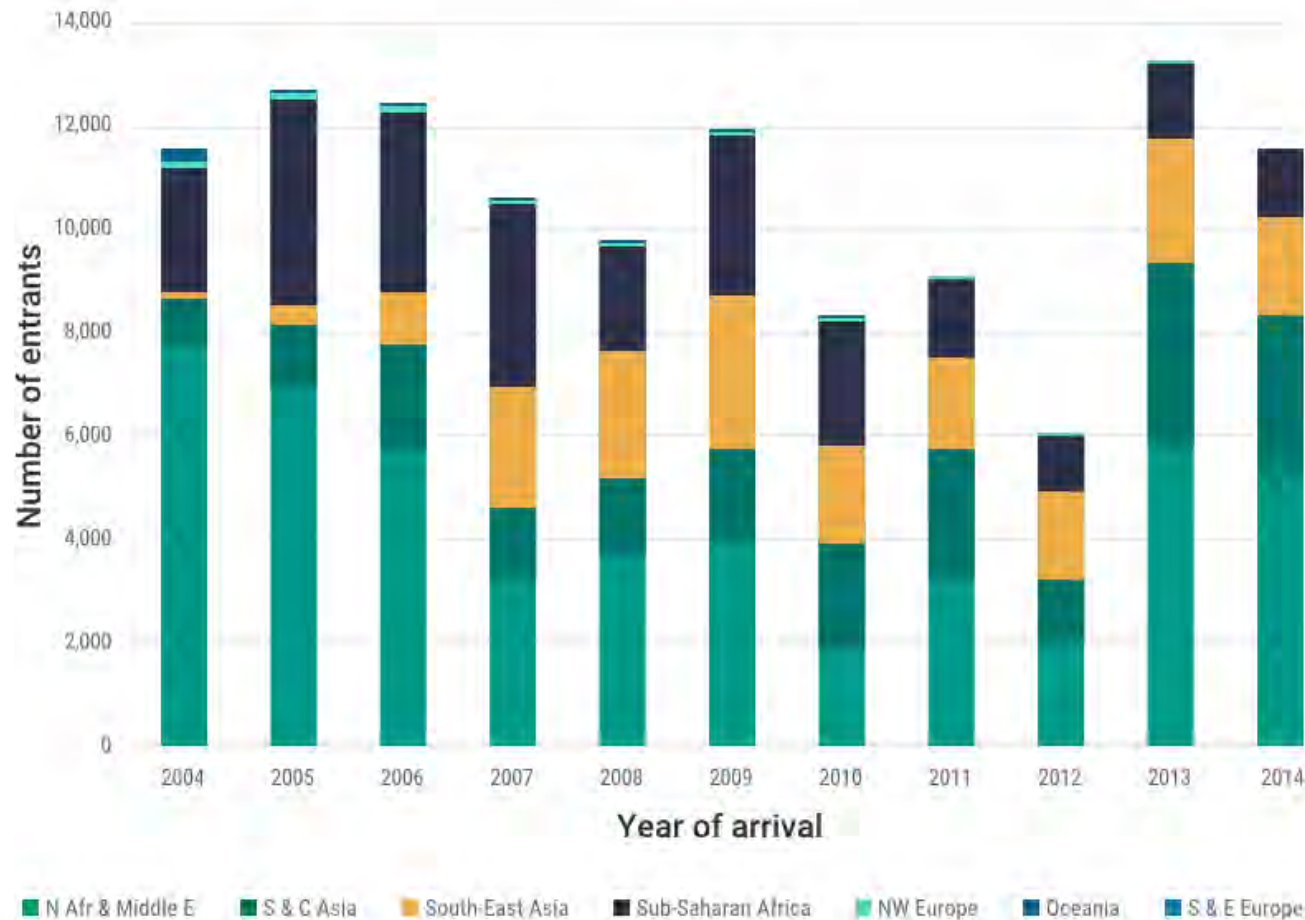


1. Migration, Australia 2014-15. ABS, 2016. (Accessed 08/10/2016)

2. Overseas arrival and departure data, Australia. Resident Departures - Intended Length of Stay and Main Reason for Journey: 1991-2015. (Accessed 8/10/2016)

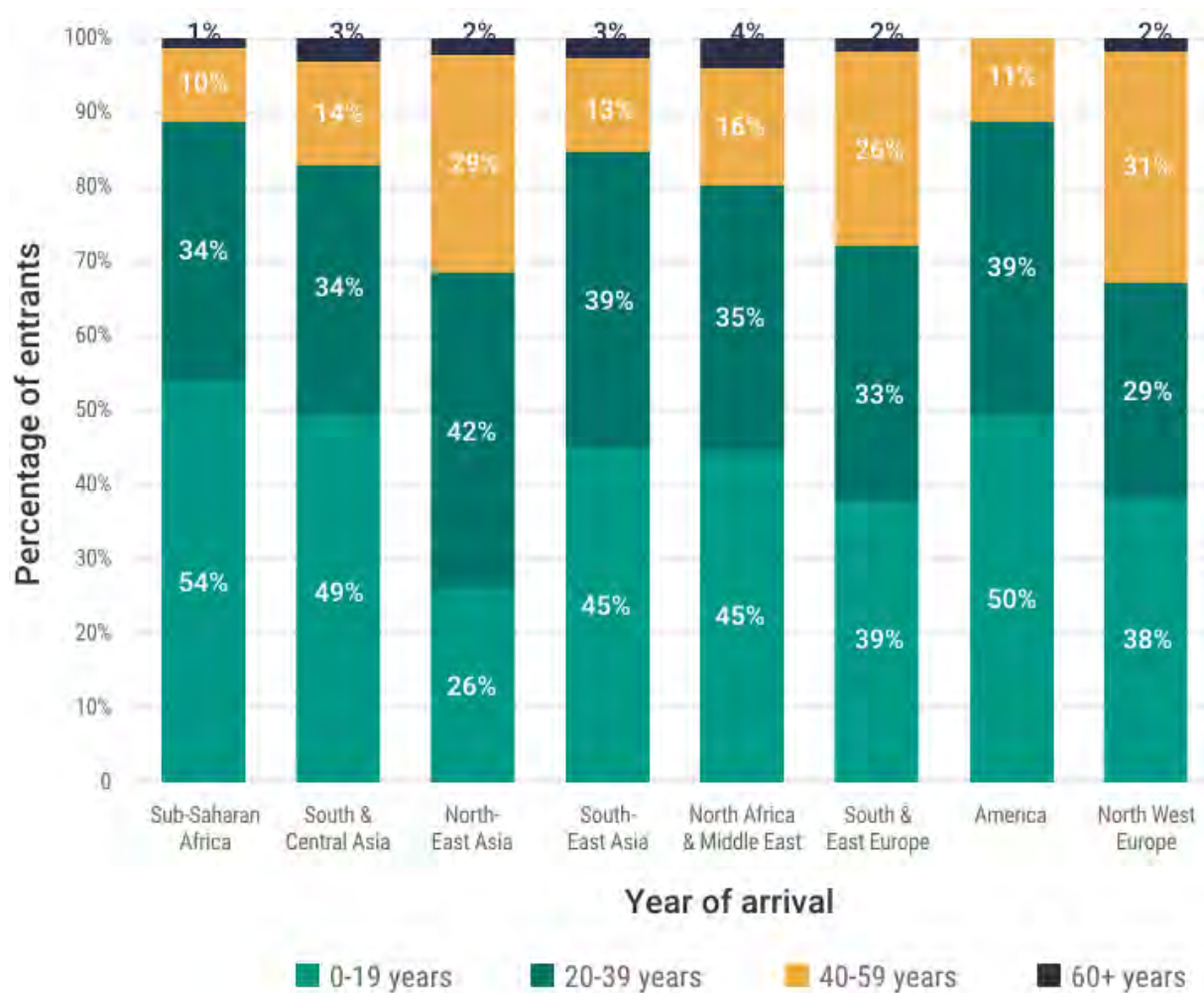
3. 34120DO0001 Migration, Australia 2006-07. Permanent arrivals, Country of birth, 1975-76 to 2006-07. ABS 2008. (Accessed 07/02/2011)

Australia's humanitarian intake, by source region, 2004-2014



In the decade 2004-2014, 55% of Australia's humanitarian entrants have come from 4 countries – Iraq, Sudan, Myanmar and Afghanistan.

Humanitarian entrants by age and source region, 2004-2014



Total:

0-19 years: 48%

20-39 years: 35%

40-59 years: 14%

60+ years: 3%

Implications

- Large intake of new residents potentially under-immunised
- The diversities in source countries for migrants and refugees is a challenge to immunisation service delivery due to:
 - Differences in immunisation schedules between the source countries and Australia
 - Differences in languages, cultural norms, practices and health seeking behaviours.

Comparison of national immunisation schedules: Australia¹ and the top five refugee source countries²

Vaccine	Australia	Afghanistan	Syria	Iraq	Myanmar	Democratic Republic of the Congo
BCG		BCG	BCG	BCG	BCG	BCG
Hepatitis B	HepB* (incl BD)	HepB* (incl BD)	HepB* (incl BD)	HepB* (incl BD)	HepB* (incl BD)	HepB* (no birth dose)
Diphtheria, Tetanus, Pertussis	DTaP*	DTP*	DTP*	DTP*	DTP*	DTP*
Polio	IPV*	IPV/OPV	IPV/OPV	IPV*/OPV	IPV/OPV	IPV/OPV
Hib	Hib**†	Hib*	Hib*	Hib*	Hib*	Hib*
Rotavirus	Rotavirus	(from 09/2017)		Rotavirus		
Pneumococcal	13vPCV 23vPPV‡	PCV		PCV (high risk only)		PCV
Meningococcal	MenC†		MenACWY		MenAC	
Yellow Fever						YF
Measles	MMR (2 doses)	Measles only (1 dose)	MMR (2 doses)	MMR (2 doses)	Measles (2 doses)	Measles only (1 dose)
Mumps						
Rubella		(from 06/2018)			MR (1 dose only)	
HPV						
Varicella	Varicella					
Influenza	Influenza^		Influenza**	Influenza**		
Herpes Zoster	HZ^^					

Departure Health Check (DHC):

- Within 72 hours of departure to Australia
- Not mandatory (and incomplete^{3,4})
- Vaccines give:
 - Measles-mumps-rubella (MMR): All aged 9 months - 54 years
 - Yellow fever/Oral polio vaccine: depending on region
 - From 2016: MMR + IPV + diphtheria-tetanus (DT/dT) for children <10 years from Syria/Iraq
- Recorded in "manifest"

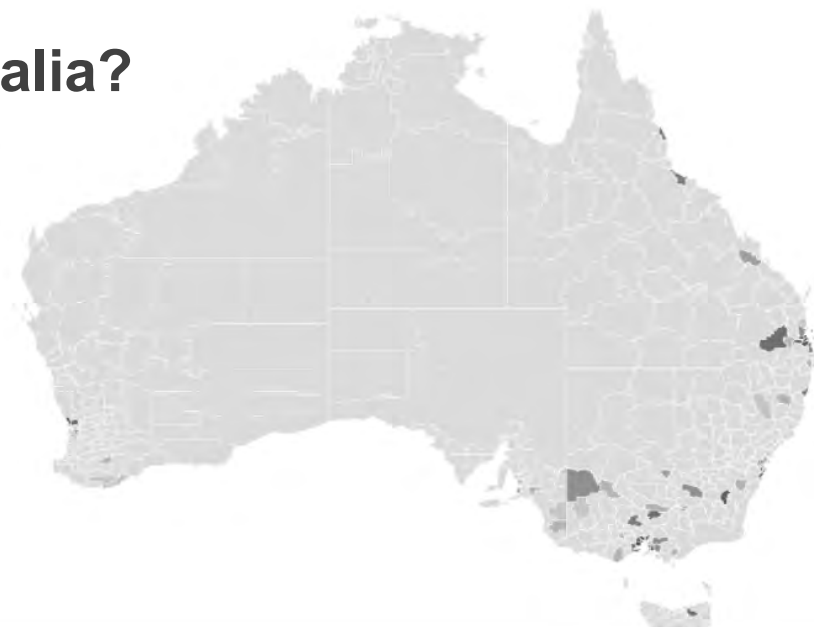
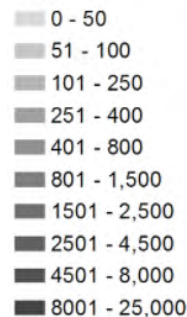
Shaded rectangle represents vaccines not routinely provided on the current National Immunisation Program.

1. Immunise Australia Program. [National Immunisation Program Schedule](#) (last updated 25 November 2016)
 2. WHO vaccine-preventable diseases: [monitoring system 2017 global summary](#) (last updated 31 July 2017)
 3. Chaves NJ et al. [Recommendations for comprehensive post-arrival health assessment for people from refugee-like backgrounds](#). 2016.
 4. Victorian Refugee Health Network. Catch-up immunisation for refugees and asylum seekers Information sheet. 2016.

Where do refugees resettle in Australia?

What models of care are available?

Humanitarian settlements by LGA



Decentralised models

- General practitioners in private practice with support from public health services e.g. Victoria, NSW

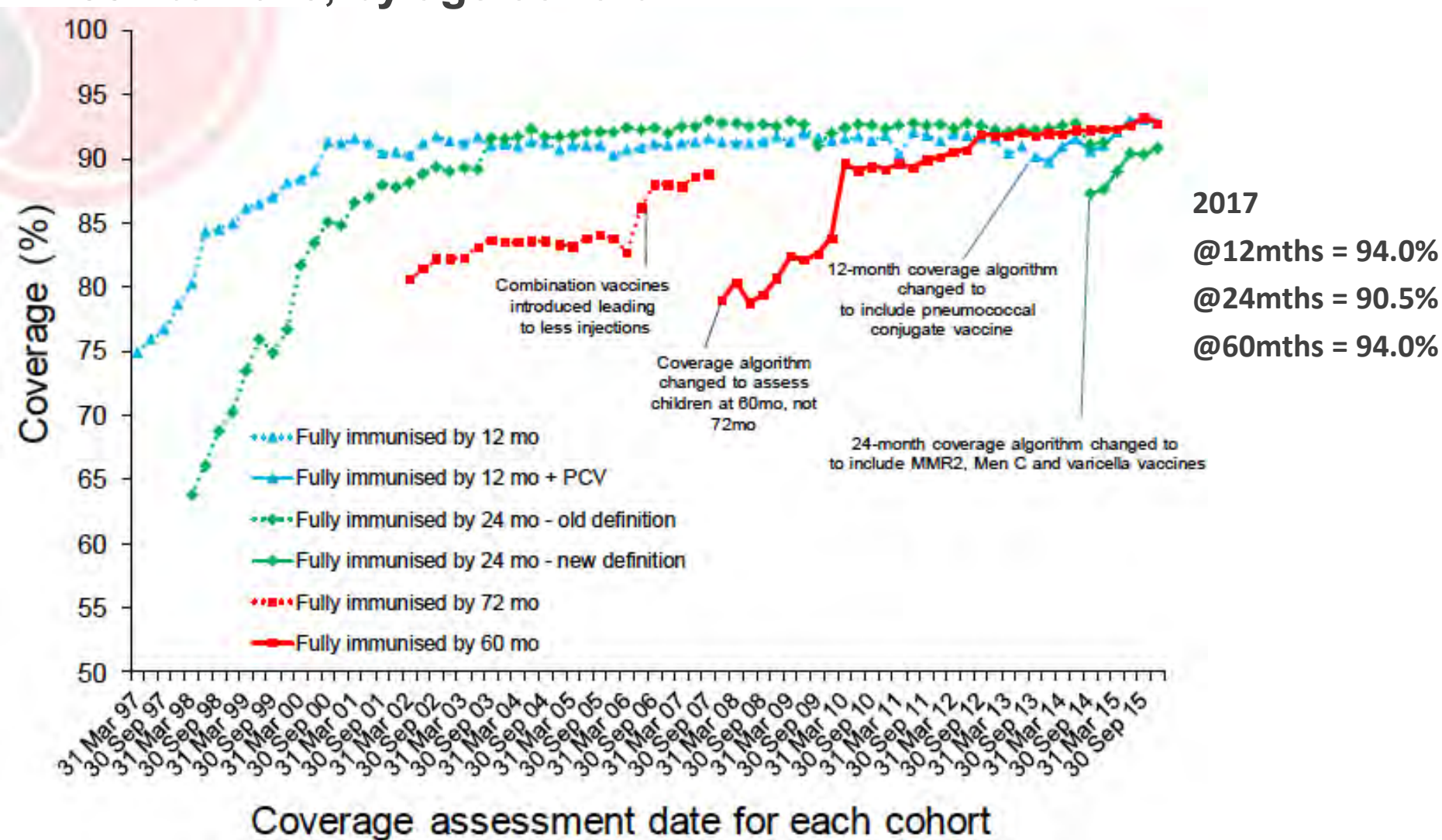
Specialised family screening clinics in hospital or community settings

- Migrant Health Unit, WA; Migrant Health Service, SA; NSW Refugee Health Service Clinics, NSW
- Companion House, Australian Capital Territory (ACT); Hobart Hospital, Tasmania; Darwin Hospital, Northern Territory (NT);

Specialised paediatric screening and/or referral clinics in hospital settings

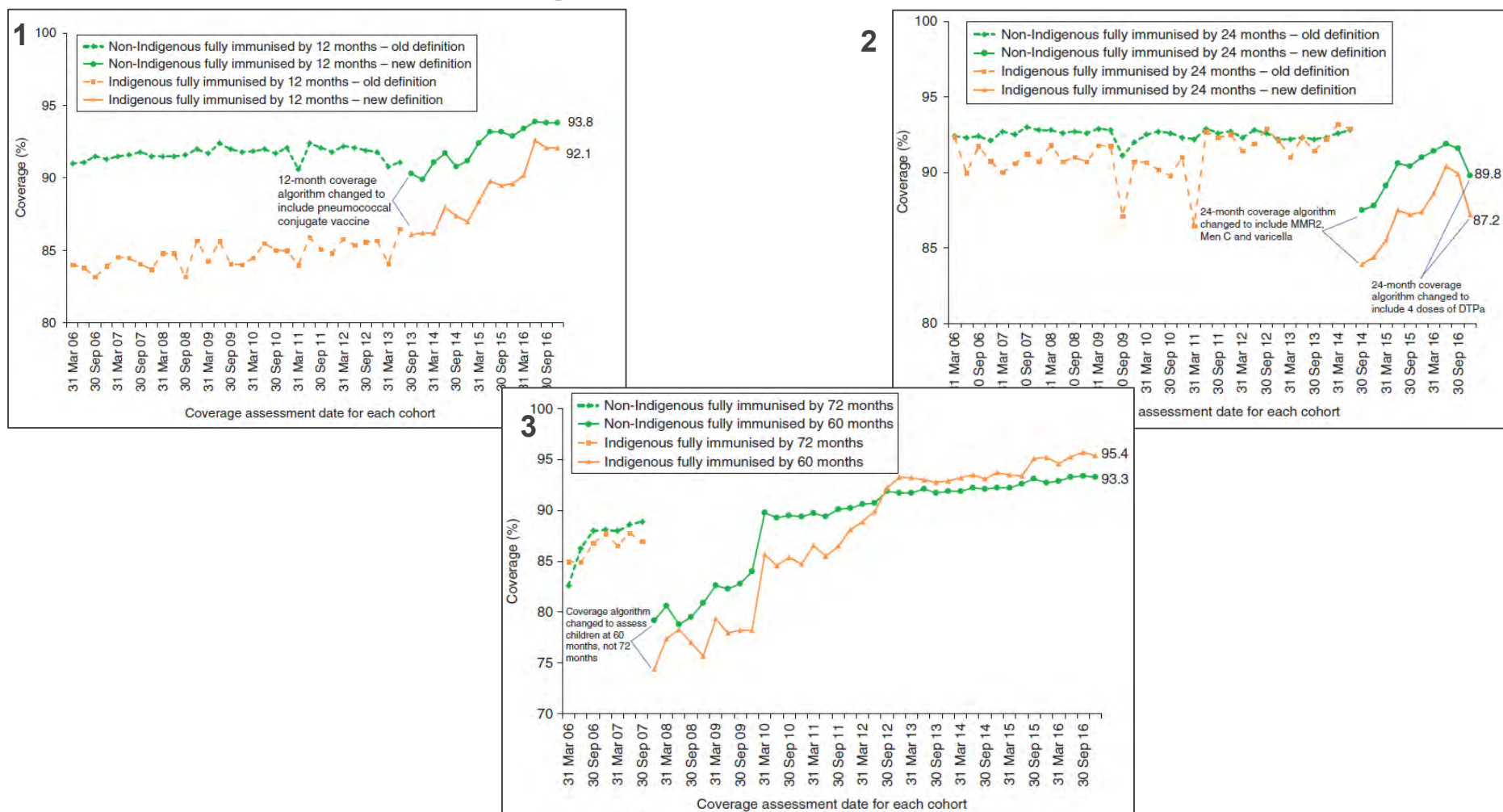
- Royal Children's Hospital, Melbourne, Victoria; Health Assessment for Refugee Kids (HARK) Clinic, The Children's Hospital Westmead, NSW; Refugee Health Service, Princess Margaret Hospital for Children, Western Australia (WA); Refugee Child Health Clinic, Sydney Children's Hospital, NSW; Liverpool Paediatric Clinic, Liverpool Hospital, NSW

Trends in 'fully immunised' vaccination coverage, Australia, 1997 to 2015, by age cohort



Fully vaccinated: assessed at 12 mo - vaccines due at 6 mo, 24 mo vaccines due at 12 mo, 60 mo for vaccines due at 48 months.

Trends in 'fully immunised' vaccination coverage at (1) 12 months; (2) 24 months; and (3) 60 months of age, Indigenous compared to non-Indigenous in Australia, 2006 to 2016.



Fully vaccinated: assessed at 12 mo - vaccines due at 6 mo, 24 mo vaccines due at 12 mo, 60 mo for vaccines due at 48 months.

Serology for VPDs among refugees resettled in Australia

Study	Study design and setting	Study population	Age (%)	Measles % (n*)	Mumps % (n)	Rubella % (n)	Hep B* % (n)	Hep A % (n)	Tetanus % (n)	Diphtheria % (n)	All tested % (n)
Tiong et al (1)	Retrospective chart review newly arrived refugees attending 6 GP clinics in metropolitan Melbourne between Jan – June 2005.	258 African refugees, arrival after 01/06/2004. Region of birth: East Africa 66%; West Africa 25%; Central Africa 9%	1-14 years >15 years	56% (36) 95% (58)	60% (37) 84% (47)	78% (54) 96% (76)	26% (23) 60% (58)	-*	52% (50) 47% (42)	-	Not reported
Skull et al (2)	Community survey, 2 clinics in Melbourne, June and July 2000. Compared self-reported vaccination status and serology.	126 East African refugees. Country of birth: Somalia 53%; Eritrea 25%; Ethiopia 17%; Kenya 5%	16-75 years	97% (119)	-	-	59% (73)	-	33% (41)	66% (81)	19% (23)
Raman et al (3)	Retrospective chart review, 3 paediatric refugee clinics, NSW 2005.	1,557 refugee children aged <14 years Region of origin by clinic: RHS Clinic: Africa/Middle East; Newcastle 99% Africa; HARK Clinic 86% Africa	<14 years	81%	-	81%	31%	-	-	-	Not reported
Paxton et al (4)	Retrospective chart review, 1 Community Health Centre, Melbourne, July 2006–October 2009. (48% of Victoria's intake)	1136 Karen refugees	<6 years: 6-11 years: 12-17 years: ≥18 years: Overall	97.6% (41) 87.5% (63) 82.5% (94) 87.3% (446) 87.1% (644)	78.6% (33) 94.4% (68) 97.4% (111) 95.9% (489) 95% (701)	Not tested Not tested 84.7% (50) 62.3% (188) 66.4% (245)	69.7% (53) 39.1% (34) 43.6% (34) 48.9% (149) 49.5% (270)	22.7% (17) 83.9% (73) 89.6% (69) 98.9% (274) 83.9% (433)	- - - - -	- - - - -	Not reported
Joshua et al (5)	Health screening of refugee children, Illawarra, 01/2007 – 12/2009	168 refugee children (Burmese & African)	<18 years	87.7% (143)	-	84.8% (139)	-	-	-	-	Not reported

* n = number seropositive; total tested differs by each antigen in some studies

† - not tested

Includes any hepatitis B surface antibody positive.

References

1. Tiong ACD et al. Health issues in newly arrived African refugees attending general practice clinics in Melbourne. *Med J Aust.* 2006;185(11):602-6. [\[Abstract\]](#)
2. Skull SA et al. Incomplete immunity and missed vaccination opportunities in East African immigrants settling in Australia. *J Immigr Minor Health.* 2008;10(3):263-8. [\[Abstract\]](#)
3. Raman S et al. Matching health needs of refugee children with services: How big is the gap? *Aust N Z J Public Health.* 2009;33(5):466-70. [\[Article\]](#)
4. Paxton GA et al. Post-arrival health screening in Karen refugees in Australia. *PLoS ONE.* 2012;7(5). [\[Article\]](#)
5. Joshua PR et al. Australian population cohort study of newly arrived refugee children: How effective is predeparture measles and rubella vaccination? *Pediatr Infect Dis J.* 2013;32(2):104-9. [\[Abstract\]](#)

- Population-level data on coverage post-arrival unavailable
- 2003 study¹ – 165 students at Western Sydney IEC high school; average settlement period 7 mths; 60% (99/165), no GP visit since arrival, 54% who had seen a GP needed MMR/HBV.
- 2011 study² – 136 recently arrived East African children and adolescents, RCH Victoria: 97% had incomplete or unknown immunisation status; 21/136 (15%) serologically immune to all (measles, rubella, tetanus, diphtheria and hepatitis B), despite a total of 395 visits to vaccine providers since migration

Barriers to immunisation - refugees

Health system	Health provider	Refugees
<p>Barriers /Challenges</p> <ul style="list-style-type: none"> • Variability in access to vaccines by jurisdiction (pre-2018) • No national refugee catch-up policy (pre-2018) • Unclear roles and responsibilities for catch-up among providers • Lack of an immunisation register for adolescents and adults (pre-2016) • Training gaps GPs on complex catch-up immunisation • Lack of healthcare trained interpreters • Unable to evaluate screening in general practice with removal of Medicare item <p>Facilitators:</p> <ul style="list-style-type: none"> • Strong commitment from State/Territory DOHs 	<p>Barriers /Challenges</p> <ul style="list-style-type: none"> • Multiple models of care and fragmented service delivery for catch-up for refugees • Communication barriers between service providers, service providers and settlement agencies, service providers and refugee clients • Uncertainty of continuity of care between refugee and mainstream care leading to incomplete catch-up <p>Facilitators:</p> <p>Commitment of service providers:</p> <ul style="list-style-type: none"> • updating skills, training medical students; developing resources e.g. local guidelines, catch-up immunisation tool • Championing community education on immunisation • Collaborations between specialised services and case workers 	<p>Barriers /Challenges</p> <ul style="list-style-type: none"> • Language barriers • High mobility and changes in services providers • Lack of familiarity with the Australian health care system • Lack of awareness of need for immunisation • Low health literacy • Logistical difficulties: finances and transport <p>Facilitators:</p> <ul style="list-style-type: none"> • High vaccine acceptance

Immunisation coverage – immigrant children

- Population-level data (AIR) data by COB unavailable

Ecological study¹

Population:

ACIR records and postcode level 1996 census data; 1997/98 cohort on ACIR

Measures:

Census data on proportion of residents who speak a language other than English + overseas-born by postcode

Results:

Postcodes with higher proportion of overseas born residents; and higher proportion NESB = lower DTP3 and MMR1 coverage

Routine follow-up of overdue²

Population:

Sample of WA children aged <7 years with no vaccines recorded on ACIR (3% pop) in Perth, 2013

Measures:

Telephone follow-up by WA Health, postcode-level audit, comparison postcodes

Results:

44% (105/240) - family had moved from overseas and their vaccination history had not been added to the ACIR. Only 1% of children from overseas were fully immunised for age according to the Australian NIP schedule.

Data-linkage studies^{3*}

Population:

ACIR records linked to birth records Perinatal Data Collection Unit (excludes migrant children), Victorian children born 1998

Measures:

Predictors of incomplete immunisation at 12 and 24 months of age

Results:

Overseas-born mother aOR 1.20 (1.10-1.30) significant predictor consistent across all the world regions examined.

** Currently no study that uses Medicare record linked ACIR (i.e. includes migrant kids)*

No Jab, No Pay: November 2015 – linked family assistance payments to ACIR. Delays in registering overseas vaccines on ACIR (1-3 weeks compared to 24 hours for on-site vaccines)⁴. BUT likely migrant children <20 receiving social support now fully vaccinated.

1. Hull et al. Factors associated with low uptake of measles and pertussis vaccines – an ecologic study based on the ACIR. ANZJPH. 2001;25:405-10
2. Gibbs et al Children with no vaccinations recorded on the Australian Childhood Immunisation Register. ANZJPH 2015
3. Haynes and Stone. Predictors of incomplete immunisation in Victorian children. ANZJPH 2003; 27: 72-9
4. Paxton et al. No jab no pay – no planning for migrant children. MJA, 2016

Under-immunisation – immigrant adults

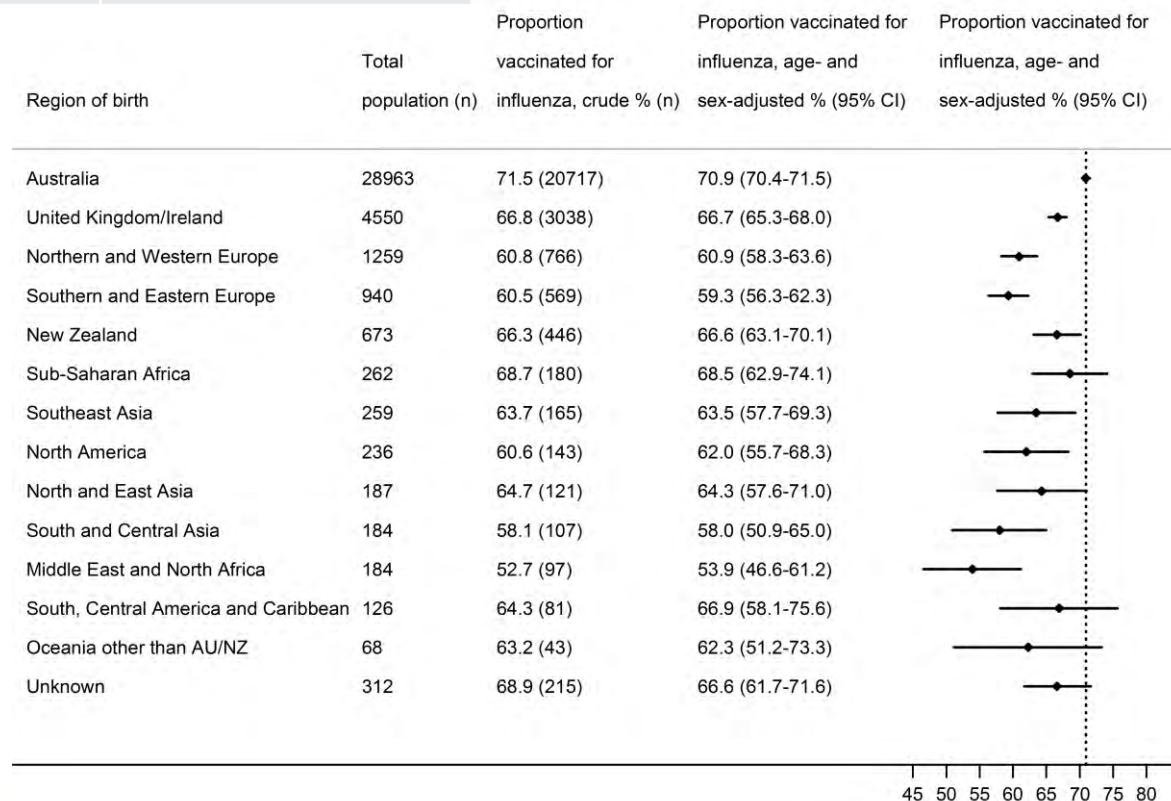
45 and up cohort study¹
>76,000 participants;
21% migrants[^]

Proportion vaccinated against influenza in past year by age group and migrant status

Age group	Aust.-born	Immigrant
49-64	39.5% (95%CI 38.9-40.0)	34.8% (33.7-35.8)*
65+	70.9% (70.4-71.5)	64.4% (63.4-65.4)*

* lower among those who spoke a language other than English at home
 NS – migration in childhood or adulthood or years lived in Australia

Proportion vaccinated for influenza in the last year by region of birth (aged 65 years and older) (n=38,203)



[^] may under-represent migrants with poor English language skills

Under-immunisation – immigrant adult and adolescent women

Maternal pertussis¹

Population:

537 women attending antenatal care, Melbourne in 2016. 69% OS-born

Measures:

Self-reported vaccination status and attitudes to pertussis vaccine

Results:

Recently arrived migrant women (resident <2yrs):

- less likely to be aware of pertussis vaccine (15/22, 68% vs 452/513, 88%, $p=0.01$);
- less likely to believe it to be safe during pregnancy (4/22, 18% vs 299/514, 58%, $p<0.001$).

HCP recommendation was significantly less likely to be recalled by women born overseas

Maternal rubella²

Population:

Women giving birth at 2 Sydney hospitals and residents of Central Sydney Area Health Service, 1999-2001.

Measures:

Obstetrics Information System data on rubella screening 1st trimester.

Results:

7% (567/8096) non-immune; 2% Australian-born; 10% OS-born; 27% Chinese-born
Of non-immune, 65% Asian-born.

Adolescent girls - HPV³

Population:

417 women aged 18-25yrs, between 2011-2014, Victoria. Recruited through online survey.

Measures:

Demographics, HPV knowledge, sexual and screening history. Vaccination status from National HPV Vaccination Program Register.

Results:

Significant association with unvaccinated (3 doses) = OS-born (aOR 4.8, 1.8-11.1). Parents OR-born NS after adjusting for OS-born (aOR 1.2, 0.5-3.1)

Dominant language: The majority of studies of KAP to maternal vaccination include only women who can speak/read in dominant language of the study country.

Immunisation coverage and barriers likely under-estimated for migrant women.

VFRs more likely to refuse vaccines

Largest study¹ – 24,478 travellers Global TravEpiNet.

- 97% eligible for 1 or more vaccines
 - 25% refused 1 or more
 - VFRs less likely to accept recommended vaccines
aOR.0.74 (0.59–0.95)

Table 3. Reason for refusing vaccines among travellers in the GTEN study population

Vaccine (N refused)	Reason traveller refused vaccine		
	Not concerned with illness N (%)	Concerned with vaccine safety	Concerned with vaccine cost
Influenza (N = 3527)	2851 (81)	526 (15)	150 (4)
Meningococcal (N = 2232)	1744 (78)	311 (14)	177 (8)
Typhoid (N = 1690)	1230 (73)	171 (10)	289 (17)
Hepatitis A (N = 1598)	1169 (73)	245 (15)	184 (12)
Tetanus (N = 1498)	1140 (76)	257 (17)	101 (7)
Polio (N = 1367)	1098 (80)	181 (13)	88 (6)
Rabies (N = 1155)	3340 (78)	421 (10)	517 (12)
Yellow fever (N = 917)	612 (67)	225 (25)	80 (9)
Japanese encephalitis (N = 761)	460 (60)	35 (5)	266 (35)

Table 1. Traveller refusal of vaccines in the GTEN study population

	Vaccine (N eligible)								
	Typhoid (N = 20 092) (%)	Hepatitis A (N = 12 990) (%)	Influenza (N = 10 539) (%)	Td/Tdap (N = 7923) (%)	Yellow fever (N = 7103) (%)	Polio (N = 5382) (%)	Meningococcal (N = 5029) (%)	Rabies (N = 2650) (%)	Japanese encephalitis (N = 1846) (%)
Vaccinated at visit	17 928 (89)	10 608 (82)	3813 (36)	5648 (71)	6038 (85)	3793 (70)	2300 (46)	351 (13)	401 (22)
Traveller refused	1690 (8)	1598 (12)	3527 (33)	1498 (19)	917 (13)	1367 (25)	2232 (44)	1155 (44)	761 (41)
Not vaccinated for other reasons ^a	474 (2)	784 (6)	3199 (30)	777 (10)	148 (2)	222 (4)	497 (10)	1144 (43)	684 (37)

^aOther reasons include referred to another provider for administration, insufficient time to complete prior to departure, vaccine not available.

Barriers to immunisation - migrants

- Support for immunisation in communities differs
- Vaccination history taking complicated by migration/different schedules

Cultural and social norms ¹	Poor access to healthcare services ¹
<ul style="list-style-type: none"> • Advice from trusted friend • HPV and sexual health – cultural taboo/promiscuity • Religious beliefs (e.g. haram – presence of porcine gelatine²) • Beliefs in opposition to biomedical/Western medicine^{2,3}. 	<ul style="list-style-type: none"> • Language barriers; • not offered/recommended the vaccine; • no information accompanying recommendations. • BUT high level of trust in HCP recommendations; • difficulties navigating health system; • cost
Knowledge gaps ¹	Vaccine hesitancy ¹
<ul style="list-style-type: none"> • Lack of knowledge of viruses being prevented • Lack of awareness of the vaccine • No information provided to them by HCPs 	<ul style="list-style-type: none"> • Concerns regarding effectiveness • Vaccine “too new” • Concerns regarding safety/side effects • Vaccines not necessary • Sceptic/mistrust

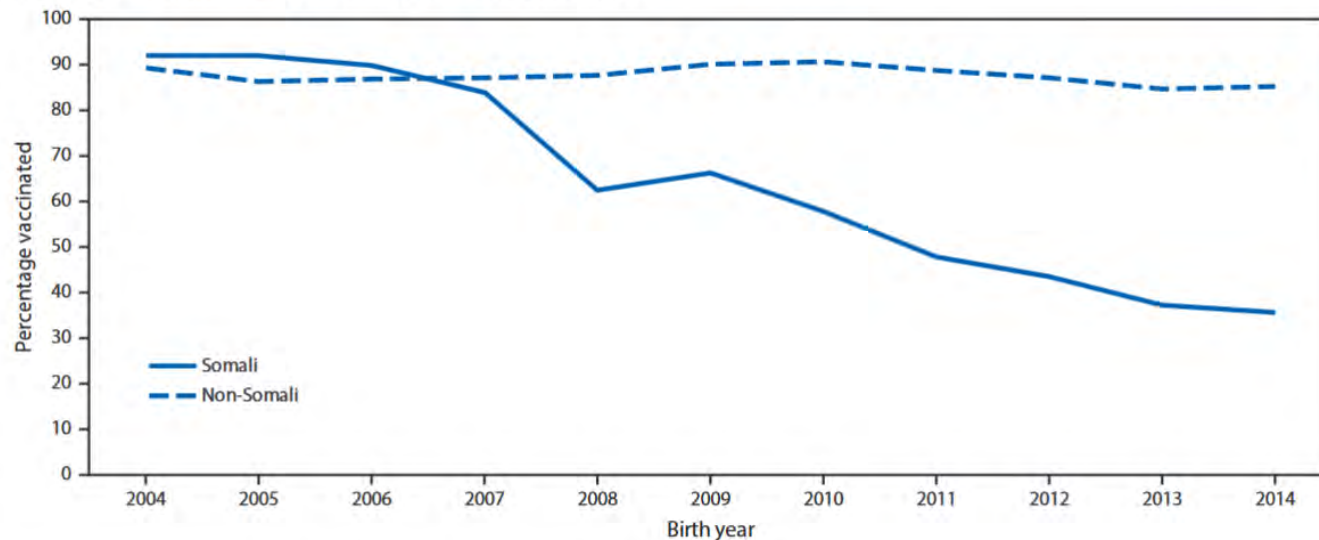
Barriers to the provision of pre-travel medical care to VFR travellers by GPs

Barrier	n	%
<i>Patient-centred</i>		
Late presentation by VFR travellers	482	85.6
Patients' low perception of risk in home country	453	80.5
Patients' believe previous immunity will be protective	356	63.2
Patients' fear of side effects	304	54.0
<i>Provider-centred</i>		
Difficulty in assessing prior vaccination or disease exposure	350	62.2
Lack of knowledge about the travel destination	249	44.2
Difficulty in locating up-to-date disease information	224	39.8
Difficulty in locating up-to-date country information	224	39.8
Lack of training in travel medicine	188	33.4
Lack of consultation time	182	32.3
Language difficulties	164	29.1
<i>System-centred</i>		
Cost of vaccines/medications to patient	442	78.5
Lack of culturally appropriate resources for patients	279	49.6
Cost of medical consultation to patient	191	33.9

VPDs among refugees

- Frequent outbreaks, measles and other VPD outbreaks in refugee camps¹⁻³
- No outbreaks of VPDs among refugee populations in Australia
- 2017 measles outbreak among Somali (refugee and non-refugee) community in Minnesota, USA. Higher prevalence of autism, anti-vaccination lobby.

FIGURE 2. Percentage of children receiving measles-mumps-rubella vaccine at age 24 months among children of Somali and non-Somali descent, by birth year — Hennepin County, Minnesota, 2004–2014

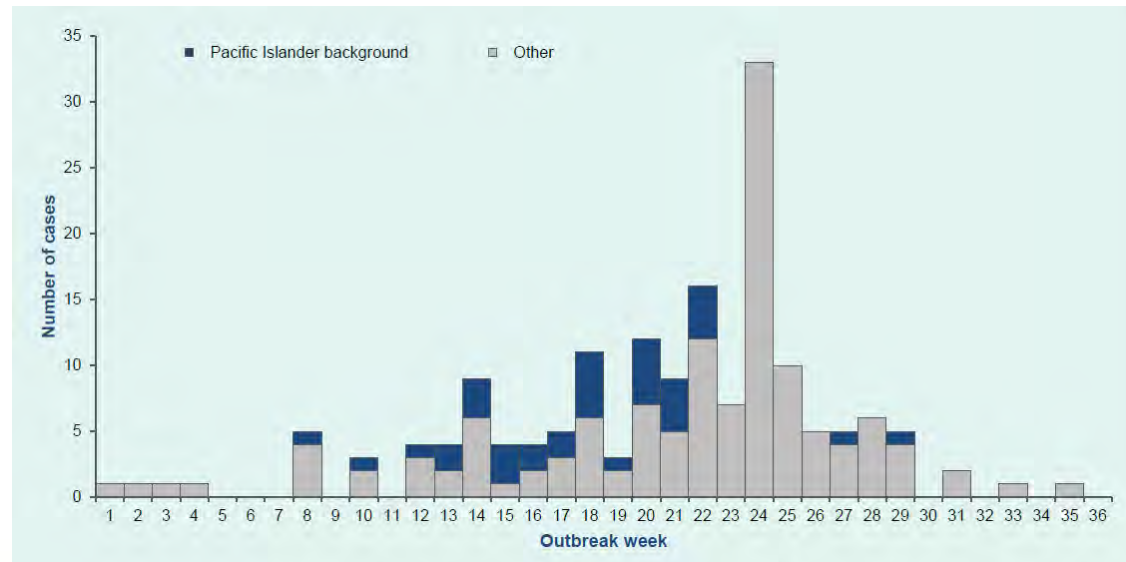


Source: Minnesota Immunization Information Connection, Minnesota Department of Health.

VPDs among migrants

- Few outbreaks directly linked (e.g. SW Sydney measles outbreak in Pacific Islander adolescents)
- Little data available.
 - Known higher rates of HIV infection, TB, chronic hepatitis B carriage, travel-associated infectious diseases
 - COB data often lacking on notification data

Number of measles cases
by outbreak week and
Pacific Islander status by
symptom onset date,
New South Wales,
Australia, April to
November 2012 (n = 168)¹



1. Najjar et al. Sustained outbreak of measles in New South Wales, 2012: risks for measles elimination in Australia. WPSAR 2014;5(1)

Chronic hepatitis B carriage – modelled estimates¹

Table 2: Estimates of the number of people living with CHB in Australia.

Group	2011 population	Prevalence of CHB*	Number of people living with CHB	Proportion of total
People born overseas	5,057,039	2.43%	122,694	56.1%
Asia/Pacific	2,347,466	3.55%	83,300	38.11%
Europe	2,131,147	1.03%	22,032	10.1%
Africa/Middle East	578,426	2.69%	15,565	7.12%
Americas	223,637	0.80%	1,796	0.82%
People born in Australia	15,021,553	0.56%	84,059	38.5%
Aboriginal and Torres Strait Islander people	548,366	3.7%	20,290	9.3%
People who inject drugs	314,013	4%	12,561	5.7%
Men who have sex with men	322,616	3%	9,678	4.4%
Other Australian-born non-Indigenous	13,836,559	0.3%	41,531	19.0%
Other/Not Stated	1,205,490	(Australian Average)	11,814	5.4%
TOTAL	21,507,719	1.02%	218,567	

* Prevalence figures for those born overseas are averages derived by number of people living with CHB divided by total population born in that region.

Refugees²⁻⁵
Prevalence of CHB: 3% to 21%
Immunity: 26% to 69%

- 95% of “new” CHB infections are new migrants
- An estimated 56% of people living with CHB in Australia have been diagnosed and notified

1. MacLachlan JH et al. [The burden of chronic hepatitis B virus infection in Australia](#), 2011. *ANZJPH*. 2013;37(5):416-422.
2. Tiong ACD et al. Health issues in newly arrived African refugees attending general practice clinics in Melbourne. *Med J Aust*. 2006;185(11):602-6.
3. Skull SA et al. Incomplete immunity and missed vaccination opportunities in East African immigrants settling in Australia. *J Immigr Minor Health*. 2008;10(3):263-8.
4. Raman S et al. Matching health needs of refugee children with services: How big is the gap? *Aust N Z J Public Health*. 2009;33(5):466-70.
5. Paxton GA et al. Post-arrival health screening in Karen refugees in Australia. *PLoS ONE*. 2012;7(5).

Congenital rubella syndrome

Table 2

Cases of congenital rubella infection born in 1993–2013 and notified to APSU.

Year of Birth	Congenital rubella infection	CRS	Mother vaccinated	Mother born overseas	Imported cases ^b
1993–2003 ^a	35	29	7	15	7
2004	1	1	Unknown	1	1
2005	–	–	–	–	–
2006	–	–	–	–	–
2007	1	1	Unknown	1	–
2008	–	–	–	–	–
2009	–	–	–	–	–
2010	–	–	–	–	–
2011	–	–	–	–	–
2012	2	2	Unvaccinated	2	2
2013	1	1	Unvaccinated	1	–
Total	40	34	7	20	10

^a Reported in previous APSU publication [10,11].

^b Infected outside Australia and mother born outside Australia.

- 59% of CRS cases 1993-2013 are in infants of OS-born mothers.

In Australia, women who are more likely to be seronegative to rubella:

- women born in Asia, Pacific islands, sub-Saharan Africa, and South America who moved to Australia after the age of routine vaccination;
- Indigenous women
- non-English speaking women;
- those aged over 35 years; and
- Australian-born Muslim women

Enhanced surveillance – travel and migration

Trip characteristic n (%)	Typhoid	Paratyphoid	HAV	HEV	Measles	Malaria	Chik	Total
Recent travel	32/35 (91)	25/25 (100)	39/58 (67)	13/14 (93)	25/44 (57)	26/26 (100)	20/20 (100)	180/222 (81)
VFR travel	31 (97)	18 (72)	24 (62)	10 (77)	11 (44)	14 (54)	9 (45)	117 (65)
Immigrant status:								
• Immigrants	22 (63)	16 (64)	18 (31)	10 (71)	13 (30)	18 (69)	8 (40)	105 (47)
• Aust-born/immigrant parents	11 (31)	3 (12)	25 (43)	3 (21)	14 (32)	3 (12)	2 (10)	61 (28)
• Aust-born/Aust-born parents	2 (6)	6 (24)	15 (26)	1 (7)	17 (39)	5 (19)	10 (50)	56 (25)

Migrants:

- 25% recent (≤ 5 yrs)
- 63% spoke language other than English
- 85% from low/middle income countries, incl. 48% South Asia. 36% 2nd generation parents born in South Asia

Children (<18 yrs) - 34.7%

- Hepatitis A 50%
- Typhoid 49%
- Measles 48%

Adults: 60% university edu.

	Migrants (n=76)	Aust-born/migrant parents (N=27)	Aust-born/Aust-born parents (N=25)
Didn't seek advice	57 (75%)	14 (52%)	12 (48%)

Changing serological profile – hepatitis A

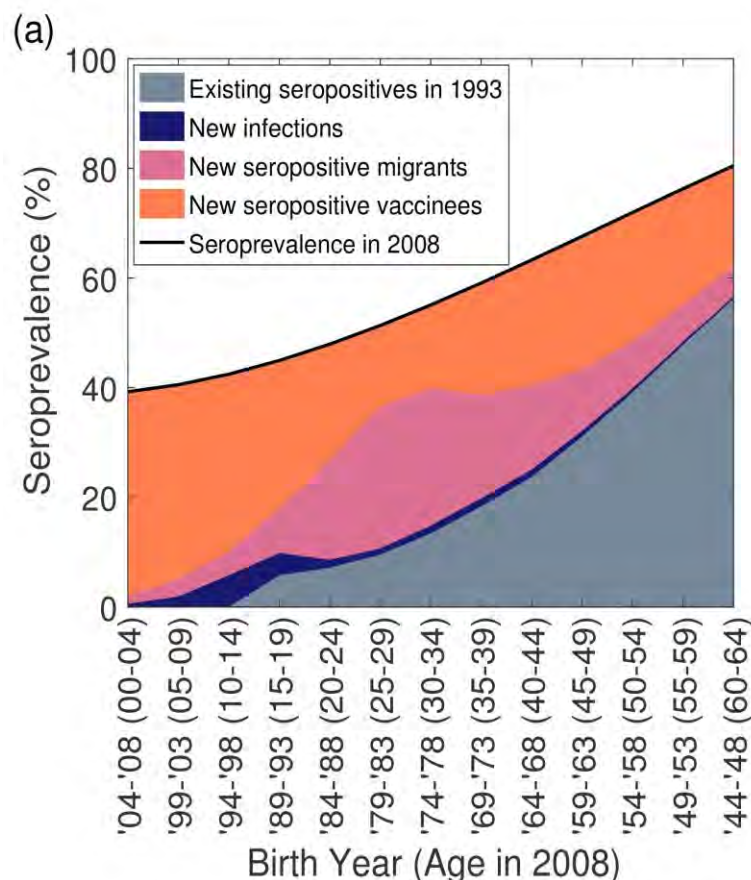


Figure 1(a) - Birth cohort specific contribution of different factors towards the increment of hepatitis A seroprevalence in Australia within the period from 1994 to 2008.

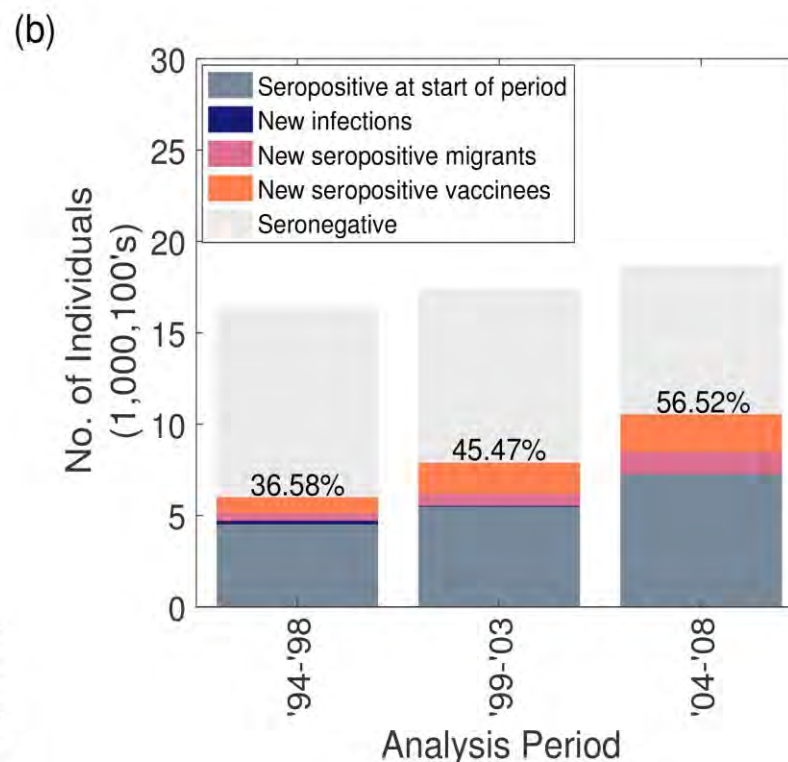


Figure 1(b) - Contribution of different factors towards the total increment of hepatitis A seroprevalence in Australia within the periods 1994 to 1998, 1999 to 2003 and 2004 to 2008. (considered at end of period)

2015 Stakeholder workshop: improving access to immunisation for migrants and refugees

Table 1: Key recommendations for addressing the gap in immunisation.

- | | | | |
|----|---|---|---|
| 1. | A whole-of-life immunisation register in Australia with the capacity to identify at risk groups such as migrants and refugees. | ✓ | ✗ |
| 2. | Address gaps in immunisation policy for refugee and migrants through a national approach to the implementation of the National Immunisation Strategy for Australia 2013-2018. | | |
| 3. | Fund vaccines for catch-up immunisation for recently arrived migrants and refugees for all age groups. | ✗ | ✓ |
| 4. | Inform targeted health education and health care delivery through improvements in the identification of risk groups for under-immunisation in routinely collected data. | | |
| 5. | Improve refugee service coordination and support for immunisation delivery in the primary care sector. | | |
| 6. | Improve community engagement and education to support immunisation program initiatives. | | |

Australian Immunisation Register Minimum dataset:

- Country of birth
- Individual’s and parent’s
- Year of arrival

- Others:**
- Language spoken at home
 - Refugee status
 - Overseas travel

Strategies to improve immunisation uptake

- Strategies that increase community demand
 - **Patient reminders**
 - Education?; Targeted promotion campaigns (mass media)
- Strategies that enhance access
 - Catch-up plans for overdue; home visits (e.g. for Indigenous); vaccine clinics in hospitals and public settings
- Provider-based interventions
 - **Provider reminders**
 - Integration of vaccination status checks into routine health assessments (opportunistic vaccination); audits; education/support; Incentives?
- Regulatory interventions
 - Cost reduction; Standing orders; Parental incentives?

Strategies to improve vaccination uptake – migrants and refugees

At the immunisation encounter

Tailoring risk communication:

- Development and evaluation of tailored communication approaches
- Exploration of the impact of tailored risk communication and patient-centred or shared decision-making approaches on behavioural change

Enhancing patient-provider communication:

- Impact of cultural competence training, professional interpreters and provision of written information on improving immunisation uptake
- Impact of strategies that aim to reduce language and cultural barriers

General Practice

Provider awareness and training:

- Increased awareness of the risks for under-immunisation
- VFR traveller awareness
- Cultural competence

Opportunistic vaccination:

- Every encounter an opportunity to assess immunisation needs
- Every encounter an opportunity to ask about future travel plans
- Travel consultations an opportunity to ensure routine vaccines are up to date

Community health promotion and education

Development of culturally appropriate messages:

- Limited evidence of impact of mass media health promotion on migrant groups
- Use of ethnic media e.g. radio
- Migrant/refugee/VFR traveller-specific intervention studies

Community participation:

- Use of informal information sources e.g. trained peer mediators/'word of mouth'
- Community consultation on key messages

Engaging stakeholders:

- E.g. ethnic medical associations, migrant healthcare providers and community resource centres, migrant community groups

- Much effort at a practice-level and local level to improve immunisation coverage.
- However, few published studies focusing on improving immunisation uptake among migrants or VFR travellers
 - Little evidence that interventions for the broader population are directly translatable

Role of primary care providers

Survey of immigrant families in the Bronx, New York (N=129)

- Parents of children born in malaria endemic countries who present for routine health maintenance visit
 - 36% planned to travel within 12 months
 - >90% reported any future travel plan
- Use of routine visits to assess immunisation needs and provide travel consultations, advice and education.
 - Discussion of whole-of-life / lifetime risk concepts regarding immunisation

Resource kits for GPs

- VFR patient handout
- Waiting room posters
- Review of literature
- Contacts



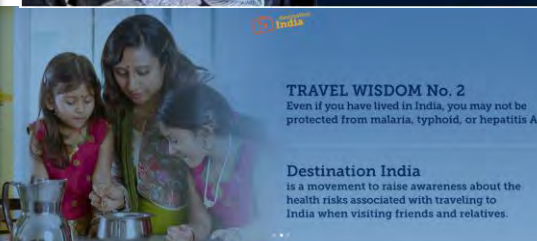
VFR travel health promotion and education strategies

Table 1. Published examples of VFR travel health promotion and education strategies

Paper	Target population	Message dissemination	Evaluation
LaRocque 2017 ⁷⁰	VFR travellers, online resource, USA	Heading Home Healthy online resources (http://www.headinghomehealthy.org) supported by Global TravEpiNet, Massachusetts General Hospital and the Centers for Disease Control and Prevention (CDC), including a video message and links to Travellers' Rapid Health Information Portal for VFRs to self-assess before visiting a healthcare provider.	Not formally evaluated
O'Sullivan 2017 ⁷²	Indian migrants, New Jersey, New York, and Connecticut, USA	A pilot word-of-mouth marketing programme 'HealthTalker' using peer educators to promote travel health to Indian migrants in the USA. http://destinationindia.myhealthtalker.com	Increased pre-travel health seeking intentions in the Indian immigrant communities tested. Full evaluation not yet publicly available.
Navarro <i>et al.</i> 2012 ⁶⁸	Sub-Saharan African and Latin American migrants in Madrid, Spain	Distribution of multilingual, culturally tailored pamphlets at a tropical medicine clinic, NGOs, migrant cultural events, embassies and businesses in high migrant areas, and available online and delivery of advice by trained intercultural mediators at a tropical medicine clinic and a NGO. Materials designed in consultation with ethnic communities. Messages included protection of VFR children, information on specialized pre- and post-travel healthcare resources.	Not formally evaluated. Over 1500 pamphlets distributed and 184 discussions by mediators over 3 years. Good acceptance of messages informally reported.
Leder <i>et al.</i> 2011 ⁶⁹	Chinese, Vietnamese and Indian migrants in Melbourne, Australia	Distribution of multilingual, culturally tailored information including a media release, newspaper article, radio interviews and community service announcements and included web-based, and television media. Printed resources (posters, tear sheets and z-cards) distributed at four community festivals.	Not formally evaluated. Over 5000 z-cards distributed at four festivals (2500 Chinese, 2000 and 700 Vietnamese). Successful media mentions and festival stall visits reported.
Gibney <i>et al.</i> 2014 ⁷¹	International students in Melbourne, Australia	Distribution of information to international students through student support advisors, medical practitioners, health insurers, and government and professional organizations. Materials focused on tuberculosis and travel-related infections for international students.	Not formally evaluated. Informal feedback from agencies sought with on-campus agencies more engaged and online resources preferred.

MALARIA: ONE FAMILY'S STORY

Badirat's story about her two-year old daughter's malaria infection after visiting family in Nigeria.



Hindi

Chinese

Tuberculosis (TB)

These symptoms can be caused by several conditions, but may be caused by TB. International students are at least 10 times more likely to develop TB than people born in Australia.

— SO —

If you answered YES, you should make a doctor's appointment and ask them about TB.

Diagnosis and treatment of TB

- ✓ Will help you feel better
- ✓ Will prevent the spread of TB to others
- ✓ Is effective and free in Australia

For further information, visit or call:

VDS
VDS, Royal Melbourne Hospital, 244 Victoria Parade, Melbourne, VIC 3000
Tel: 03 9342 7299

Healthline
1800 111 111
For more information, visit www.healthline.com.au
or call 1800 111 111

VDS **MONASH**

Figure 1 Tuberculosis postcard. a. Front. b. Back.

Summary

- Strategies to improve coverage in new migrants – maintenance of overall high coverage (childhood NIP) and reduce travel-associated VPDs
- Improved methods of monitoring of coverage by sub-groups including 1st and 2nd generation Australians is needed.
- Strategies that focus on new migrants/refugees needed
 - Three tiered approach:
 - Improved access
 - Improved knowledge and community engagement
 - Improved HCP training/promotion of opportunistic vaccination

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 - GSK Independent Medical Education for the education of Australian Health Care Professionals. Mahimbo A. Heywood A.E. Seale H. Zwar N, Kay M. Bissinger W and Smith M. *A practical approach to travel immunisation in general practice with a focus on visiting friends and relatives and refugee populations.*

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Thank you