Post-migration immunisation – the example of Australia’s refugee intake
Dr Anita Heywood
School of Public Health and Community Medicine, University of New South Wales

Outline
• Australia’s migration policies
• Australia’s immunisation policies & program
  • Before and after major policy change
  • Resources available for immunisation providers to assist with catch-up

Migration to Australia: a snapshot
Australian population
• 25M population: Indigenous 3.3%; 1st generation migrants: 28.4%; 2nd generation (at least 1 immigrant parent): 20.9%
• Top COB: UK, NZ, China, India, Philippines

Migration program
• Humanitarian program
  - UN intake
  - Special Humanitarian program
  - “compelling reason”
  - Proposer stream – pays for travel and settlement

Asylum seekers
- 12,500 people in offshore detention
- “Lawful” arrivals (by plane) seeking asylum (2017-18):
  - 18,290 applications, 1,711 PPV granted.

Refugee program
- UN intake
- Special Humanitarian program
- “compelling reason”
- Proposer stream – pays for travel and settlement

Australia’s humanitarian resettlements by year and region of origin, 2004-2014

Humanitarian entrants by age and source region, 2004-2014

Total:
- 0-19 years: 48%
- 20-39 years: 35%
- 40-69 years: 14%
- 60+ years: 3%
Health checks visa requirements for Australian migrants, refugees and asylum seekers

All permanent migrants

- Immigration Medical Examination (IME) - 3 to 12 months
  - Full medical – assess health requirements
  - CD4 (if HIV)
  - LP50 or TLT (if HIV+)
  - Urine analysis
  - stool culture
  - Hybridisation for Hepatitis B
  - Urine pregnancy test
  - Ancestral medical reports
  - History of TB
  - Intestinal parasites
  - stool microscopy
  - Strongyloides serology
  - Blood-borne viruses
  - serology
  - Malaria
  - Tuberculosis
  - Hepatitis
  - Syphilis
  -atoi (if relevant)
  - CXR

Humanitarian entrants

- Pre-Departure health check (DHC) within 72h
  - Full medical – assess health requirements
  - CD4 (if HIV+)
  - LP50 or TLT (if HIV+)
  - Urine analysis
  - stool culture
  - Hybridisation for Hepatitis B
  - Urine pregnancy test
  - Ancestral medical reports
  - History of TB
  - Intestinal parasites
  - stool microscopy
  - Strongyloides serology
  - Blood-borne viruses
  - serology
  - Malaria
  - Tuberculosis
  - Hepatitis
  - Syphilis
  -atoi (if relevant)
  - CXR

Asylum seekers

- Start medical
  - Increased rate of or abnormal
  - Predisposing factors
  - Physical examination
  - Medical history
  - General practitioner for referral
  - Blood tests for referral
  - CXR – history of TB
  - LTBI (if relevant)
  - HIV (if relevant)
  - Ultrasound

- Recorded in “health manifest”
  - YF – if relevant
  - CXR – history of TB, LTBI, clinical
  - Empirical treatment for intestinal
  - Pre-departure
  - Onshore

Pregnant women

- HBsAg test

Children

- CXR (#)

What models of care are available?

- General practitioners in private practice with support from public health services e.g. Victoria, New South Wales (NSW)
- Migrant Health Unit, SA, Migrant Health Services, SA, NSW Refugee Health Services Clinics, NT
- Commissary House, Australian Capital Territory (ACT)
- Hospital, Tasmania, Sydney (NSW), Victoria (Vic)

Specialised models

- Specialist family screening clinics in hospital settings
- Specialist pediatric screening and/or referral clinics in hospital settings

Medicare and other entitlements by visa type

| Visa Type | Medicare | Student Benefits | Pensioners & Permanent Residents | Veterans
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>Eligible</td>
<td>Not eligible</td>
<td>Eligible</td>
<td>Eligible</td>
</tr>
<tr>
<td>Student Benefits</td>
<td>Eligible</td>
<td>Not eligible</td>
<td>Eligible</td>
<td>Not eligible</td>
</tr>
<tr>
<td>Pensioners &amp; Permanent Residents</td>
<td>Eligible</td>
<td>Not eligible</td>
<td>Eligible</td>
<td>Eligible</td>
</tr>
<tr>
<td>Veterans</td>
<td>Eligible</td>
<td>Not eligible</td>
<td>Eligible</td>
<td>Eligible</td>
</tr>
</tbody>
</table>

Translating and interpreting services

- Document Translations
  - Permanent residents and select temporary visa holders maximum 10 eligible documents translated into English, 2 year limit
  - Includes vaccination records

- Immediate phone interpreting
  - Free to: state and federal government departments, local councils, medicare
  -ную, health practitioners, pharmacies, utility companies
  - telecommunication companies
  - emergency services
  - legal services
  - settlement and community service providers
  - real estate agencies

- Pre-booked phone interpreting
- On-site interpreting

Humanitarian settlements by Local Government Area of residence, Australia, 2000-2016

Post-arrival health assessment

- Medical history and examination
  - Infectious diseases screening incl. TB, blood-borne viruses, endemic infections, STIs, skin infections, Helicobacter pylor
  - Based on the premise of equity – that all refugees should be immunized equivalent to an Australian-born person of the same age
  - Mental health and social and emotional well-being
  - Includes trauma screening, self-harm assessment and current functioning

Check list

- [ ] Assessment of health status for medical follow-up
- [ ] Initial health screening
- [ ] Referral
- [ ] Immunisation schedule


Source: Australian Government Department of Home Affairs; The Australian Government Department of Health; The Royal Children's Hospital Melbourne Immigrant Health Service

*if they are applying for a Humanitarian or onshore protection visa, OR from a high tuberculosis (TB) prevalence country, OR declare previous household contact), with further investigation for TB if positive (starting in 2016)

# younger if indicated
**Post-arrival health assessment**

- Health waiver + lack of access to care due to circumstances of migration = complex health needs
  - No prior healthcare access
  - Low health system literacy, limited understanding of population screening
  - If low SES, low health literacy
- Immunisation often low on the list of priorities at first visit
- For GPs: time-based MBS health assessment billing items:
  - 707 (prolonged): 60 minutes

**Serology for VPDs among refugees resettled in Australia**


**Immunisation – the Australian context**

**Australia’s National Immunisation Program schedule:**

- 7 schedule points and 15 vaccines in childhood
- Additional vaccines/doses for medically at risk and Aboriginal and & Torres Strait Islanders
- School-based program for adolescents
- Frequent schedule changes

**Vaccine delivery in Australia**

- NIP vaccines
  - Fully funded to Medicare eligible
  - Upper age limits for catch-up (pre-2016)
- Main vaccine providers
  - Primary practice
  - Adolescent school-based program
  - Refugee health service

Proportion of immunisations on the ACIR given by provider type, by State or Territory.
Immunisation registers (pre-2016)

- Australian Childhood Immunisation register (ACIR)
  - National register for recording vaccines given to children aged <7 years
  - Administered by Medicare; immunisation providers can add children not on Medicare.
  - Electronic transfer of vaccines provided from practice software to ACIR (majority)
  - Overdue reminders sent to parents by Medicare
  - Provider-endorsed overseas vaccinations can be entered (GP only)
  - Provider-endorsed medical and conscientious objection can be recorded
  - General Practice Immunisation Incentives: completing individual child’s vaccines; provider-level coverage >90%
  - Parent incentives: maternity allowance, child care benefits
  - Records Indigenous status and postcode but no other demographic information.

- National HPV Vaccination Program Register

- Separate School-based vaccine register

Trends in ‘fully immunised’ vaccination coverage, Australia, 2006 to 2016, by 3 month age cohort

- High sustained coverage of childhood vaccines
- Australian National Immunisation Program coverage, 2017:
  - @12mths = 94.0%
  - @24mths = 90.5%
  - @60mths = 94.0%

Immunisation coverage – migrant children

Ecological study

| Population: | ACIR records and postcode-level 1996 census data, 1996/97 school 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 overseas children

| Population: | Sample of 9,700 children aged 15 years with no vaccines recorded on ACIR (20%) pop of 80,000 |
| Measures: | Telephone follow-up by 89% health professionals; ‘adequate vaccination history’ |
| Results: | 67% (14/21) – family had received overseas and AUS vaccination history had not been added to the ACIR |
| Results: | Only 1% of children from overseas are fully immunised for age according to the Australian NIP schedules. |

Data-linkage studies

| Population: | ACIR records linked to NSW hospital Neonatal Data Collection; not recorded; 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 regions examined. |

Vaccine coverage - refugees

- Population-level data on coverage post-arrival unavailable
- 2003 study – 165 students at Western Sydney IEC high school; average settlement period 7 months;
  - 60% (99/165) no GP visit since arrival,
  - 54% who had seen a GP needed MMR/HBV.
- 2011 study – 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 385 visits to vaccine providers since migration
### Evaluation of refugee immunisation services:

**Health system**

**Barriers /Challenges**
- Access variability to vaccines by jurisdiction
- No national refugee catch-up policy
- No immunisation register for adolescents and adults
- Difficulties in obtaining health manifest (vaccines given in pre-departure health check or in detention)
- Unclear roles and responsibilities for catch-up among providers
- Training gaps for GPs on complex catch-up immunisation
- Lack of healthcare trained interpreters
- Unable to evaluate health assessment access and coverage

**Facilitators:**
- Strong commitment from State/Territory DOHs

---

### Barriers and facilitators to immunisation – Australian refugees (2016)

**Health provider**

**Barriers /Challenges**
- Multiple models of care/fragmented service delivery for catch-up immunisation
- Communication barriers between service providers, settlement agencies, and clients
- Lack of continuity of care between refugee and mainstream services leading to incomplete catch-up
- Complexity of catch-up schedule

**Facilitators:**
- Commitment of service providers:
  - 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

---

### Refugees

**Barriers /Challenges**
- 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
- Cost of catch-up outside age eligibility

**Facilitators:**
- High vaccine acceptance

---

### Age-restricted catch-up: a barrier to immunisation for migrant and refugee adolescents and adults (Victoria, 2016)

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Cost of Catch-Up for Migrant and Refugee Adults (Aged 16-26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>$40 (2 doses at $20 each)</td>
</tr>
<tr>
<td>HPV</td>
<td>$450 (3 doses at $150 each)</td>
</tr>
<tr>
<td>VV</td>
<td>$130 (2 doses at $65 each)</td>
</tr>
<tr>
<td>MenC</td>
<td>$106 (1 dose)</td>
</tr>
</tbody>
</table>

---

### Barriers to immunisation - migrants

**Cultural and social norms**
- Advice from trusted friend
- HPV and sexual health — cultural taboos
- Religious beliefs (e.g., haram: presence of porcine gelatine)
- Beliefs in opposition to biomedical/Western medicine

**Knowledge gaps**
- Lack of knowledge of diseases being prevented
- Lack of awareness of vaccine
- No information provided by HCPs

**Fear of healthcare services**
- Language barriers
- Uncertainty or efficacy
- Concerns regarding vaccine “too new”
- Concerns regarding safety

---

Sources:
3. Ma, Heywood, Macintyre. Chinese VFR travellers

---

**Notes:**
- Cultural and social norms can influence vaccine acceptance.
- Knowledge gaps and fear of healthcare services highlight the need for tailored education and support.

---

**Support for immunisation in communities differs**
2015 Stakeholder workshop: improving access to immunisation for migrants and refugees

Table 1: Key recommendations for addressing the gap in immunisation

| Australian Immunisation Register dataset:                                      |
| ● Country of birth for individual and parents.                               |
| ● Year of arrival.                                                           |

1. From 1 January 2016:
   - Removal of conscientious objection clause.
   - Linking “fully vaccinated for age” to benefits eligibility <20 years.
   - Requirements for early childhood care.

Advocacy...

Some migrants and refugees under-immunised.

A public health issue: calls for national refugee immunisation strategy.

UPDATE: expansion of Australia’s Immunisation Registers

This update provides information on the recent legislative changes to expand the scope of Australia’s free childhood immunisation benefits. The Australian Childhood Immunisation Register and the Meningococcal Group C vaccine register have been expanded to include those aged <20 years and <5 years.

- Major new development announced in May 2015.
- ACIR expanded to age <20 years by 1 January 2016.
- Facilitate ‘no-jab no-pay’.
- Expanded to all ages November 2016.
- HPV vaccine register → School register (add varicella, DTP).

Funded vaccines for catch-up immunisation

Vaccination via national program:

- Free catch-up vaccines for all individuals aged 10 to 19 years (aged 0).
- School register (add varicella, DTP).

Success?

80% no jab, no pay. 10,000 immunised children to avoid family payment cuts.

Coercion a successful question for rally.
"No jab no pay"

- Significant workforce pressure on GPs and practice nurses
- Ensuring vaccines
- Signing medical exemptions
- Delays in updating AIR due to complex catch-up
- Likely migrant children <20 receiving financial support are now fully vaccinated.

Barriers to immunisation – refugees (2018)

### Health system

- Access variability by jurisdiction
- Training gaps for GPs on complex catch-up immunisation
- Unclear roles and responsibilities for catch-up among providers

### Health provider

- Language barriers
- High mobility and changes in services providers early in settlement period.
- Lack of awareness of need for immunisation
- Low health literacy
- Logistical difficulties: finances and transport

### Referees

- Differences in schedules – numerous additional vaccines on Australian NIP
- Likely vaccine quantity issues such as disruption to cold chain.

Challenges with delivering and completing catch-up vaccinations for refugees in Australia

### Pre-arrival factors

- Differences in schedules – numerous additional vaccines on Australian NIP
- Disruption of health services, including immunisation in countries of origin, and poor access to healthcare due to forced migration.
- Likely vaccine quality issues such as disruption to cold chain.

### Post-arrival factors

- Provider expertise/experience in providing catch-up vaccinations
- Difficulty assessing prior immunisation records including overseas, during processing and other Australian providers – written records and inefficient information management.
- Challenges in providing informed consent – difficulties in accessing language services and translated immunisation information.

Example catch-up for a family of 6

- 3+4 visits for each family member – aim to minimize visits and needles required
- Different paediatric and adult formulations
- Different multivalent vaccine options e.g. Infanrix hexa® (DTPa-IPV-Hib-HBV) or Infanrix penta® (DTPa-IPV-HB)
- Schedule changes (e.g. Men ACYW replaces Men C from 2017)

Specialist vs. integrated healthcare

### Refugee health services

- High-level expertise and experience in refugee health
- Integrated into referral pathways for refugees

### Mainstream primary care services

- Important for long-term healthcare access
- Sponsored refugees may attend

Clinical tools, assistance and training

- NCIRS – Australian Immunisation Handbook
- Refugee network affiliated groups – State and Territories
- Access to advice – Primary Health Networks
- SA Immunisation calculator (<8 years of age)
- Immunisation worksheets
- CPD accredited training

Government guidelines for catch-up immunisation

- Worksheets
  - Catch-up worksheet for children <10 years of age for National Immunisation Program vaccines
- Tables
  - Number of vaccine doses the child should have received by their current age
  - Minimum acceptable dose intervals for children <10 years of age
  - Catch-up schedule for Haemophilus influenzae type b (Hib) vaccination for children <5 years of age
  - Recommended doses and intervals between doses for human papillomavirus (HPV) vaccines, by age group at the start of the course
  - Catch-up schedule for people ≥10 years of age (for vaccines recommended on a population level)

Development of an online educational program for GPs

Module 1: Understanding under-immunisation among refugees
- Who are Australia’s refugees?
- What is the burden of vaccine-preventable disease among our refugee population?
- What data do we have on vaccine history of refugees?
- Why are refugees at risk of under-immunisation in Australia?

Module 2: Delivering culturally-appropriate immunisation services
- What are the attributes of a culturally competent service provider?
- What are the barriers to health service access for immigrants and how can they be alleviated at a practice level?
- What are the best practice strategies for obtaining informed consent?
- What are the best practice strategies for utilising trained interpreters in your practice?

Module 3: The immunisation encounter
- What are the principles of catch-up vaccination?
- What are the steps in assessing immunisation needs, planning and providing catch-up for refugees across all age groups?
- How do I record catch-up vaccines on the Australian Immunisation Register?
- How do I utilise best practice patient recall and reminder systems effectively?

Module 4: Electronic reporting and reminder systems
- How do I record catch-up vaccines on the Australian Immunisation Register?
- How do I utilise best practice patient recall and reminder systems effectively?

Case study: CPD program: Suzie

- Suzie comes to see Dr Margaret Kay on recommendation from her sister. The siblings arrived in Australia more than 10 years ago, as children from Myanmar. Her sibling had attended the clinic and during consultation Dr Kay identified that she was from a refugee background.
- Suzie is now 21 years of age. She has no vaccination records but would have been age-eligible for the adolescent school-based hepatitis B catch-up program.
- When Suzie came to Dr Kay’s practice, she discovered that Suzie had never undergone a post-arrival health assessment.
- What (VPD) screening tests should Dr Kay perform?
Chronic hepatitis B infection in refugee populations

- Overall, prevalence of hepatitis B carriage is higher among refugees compared to Australian-born residents (overall prevalence in Australia is 1.02%)
- Data on chronic hepatitis B infection are available from a number of small cohort studies of newly arrived refugees
  - Prevalence ranges from 3% to 38%, depending on countries of origin and age group and time of arrival
  - Highest: African refugees seen at Darwin refugee health service, 2009-2010 (38% positive)
  - Lowest: Middle-Eastern refugees – 0% in two available studies
- Recommendations:
  - Offer testing for hepatitis B virus (HBV) infection to all refugees (HBsAg, HBsAb, HBcAb)
  - Clinical assessment of all HBsAg positive
  - Vaccinate (if susceptible) and record on AIR
  - Book follow-up visits before patient leaves the clinic
  - Test and vaccinate (if susceptible) sexual partners and household contacts

Answer sheets: catch-up plans

- Compare the catch-up plan you developed with the one below
- Did you have the same number of visits, use the same combination vaccines and adhere to the minimum dose requirements?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Visit 1</th>
<th>Visit 2</th>
<th>Visit 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>MMR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphtheria</td>
<td>DPC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus</td>
<td>TT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polio</td>
<td>OPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae A</td>
<td>HIB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae B</td>
<td>Hib3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>Varicella</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotavirus</td>
<td>Rotarix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcus</td>
<td>PCV13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>HAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>HBV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary

- Large intake of new residents potentially under-immunised
- Significant impact of mainstream policy changes and timed advocacy
- Multifaceted system-level strategies
  - National approach to funding catch-up
  - Whole of life immunisation register to assist with catch-up for older children/adults
  - Improved HCP training/promotion of opportunistic vaccination
- Remaining challenges
  - Data: No mechanism for monitoring immunisation coverage at a population level or refugee immunisation (or uptake of post arrival health screening)
  - Continued advocacy for minimal dataset for AIR
  - Remaining training gaps for provision of complex catch-up for primary care providers
  - Limited funding and resources
  - Continuity of care and communication between refugee and mainstream services

Acknowledgements

- Thank you to Dr Abela Mahimbo for her PhD research that informed many of these slides.
- Dr Mitchell Smith, Director, Refugee Health Unit, NSW Health and member Refugee Health Network of Australia (RHeA
- Dr Margaret Kay, General Practitioner and Multicultural Health Clinical Lead, Brisbane South Primary Health Network and member RHeA
- Dr Anne Watson, Senior Clinical Advisor, Health Services & Policy Division, Department of Home Affairs
Discussion questions

• What are the advantages and disadvantages of pre and post-migration immunisation for refugees in these settings?
• Who is best placed to provide immunisation services to refugees?
• Which has the greatest impact – system-wide policies vs. refugee-specific policies?
  o What system-wide policy changes have impacted on immunisation access for refugees in other countries?
• Who is missing out on immunisation?
  o How does this compare to other countries?
  o What are the barriers – system, provider, refugee level – to accessing immunisation services in other countries?