



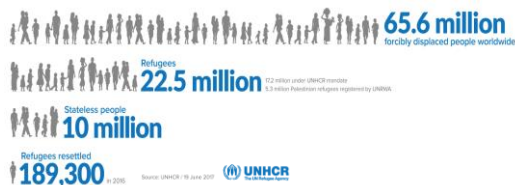
EXPLORING INEQUITIES FOR IMMUNISATION AND VACCINE-PREVENTABLE DISEASES
AMONG MIGRANT AND NON-MIGRANT CHILDREN IN NEW ZEALAND

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BACKGROUND

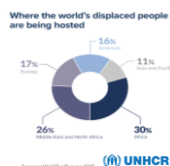
Levels and trends in international migration

- "The number of international migrants worldwide has continued to grow over the past 17 years, reaching 258 million in 2017..." (United Nations, 2017).



BACKGROUND

- New Zealand accepts migrants and refugees under various schemes
- Migrants primarily re-locating for work or study purposes
- Refugees enter under quota, humanitarian and family reunification schemes



New Zealand Refugee Quota Programme

New Zealand is one of around 26 countries that take part in the United Nations High Commissioner for Refugees (UNHCR) regular resettlement programme.

Potential for the transmission of vaccine-preventable diseases across national borders



STUDY AIM

Explore immunisation rates and burden of vaccine-preventable disease-related hospitalisations among migrant and non-migrant children in New Zealand

METHODOLOGY

- Retrospective cohort study
- Ethical approval granted by UAHPEC (reference #: 017200)
- Study period:
 - 1 January 2006 to 31 December 2015
- 3 cohorts
 - A*: foreign-born migrants**
 - Children aged up to 5 years who arrived in NZ prior to their 5th birthday between 2006 and 2015
 - B*: NZ-born migrants**
 - Children aged up to 5 years born to mothers who migrated to NZ between 2006 and 2015
 - C. NZ-born non-migrants (comparator group)**
 - Children aged up to 5 years born to non-migrant mothers in NZ between 2006 and 2015

*Column A and B include returning NZ citizens/residents.

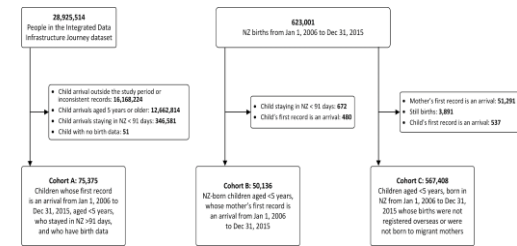
METHODOLOGY

- Data sources
 - Integrated Data Infrastructure (IDI) – contains de-identified data and enables linkage across databases from various sources
 - MOH's National Health Index (NHI) for demographic data
 - MBIE and NZ Customs Journey datasets for immigration and travel data
 - Department of Internal Affairs for life event data
 - National Immunisation Registry (NIR) for immunisation data
 - MOH's National Minimum Data Set (NMDS) for hospitalisation data
- Variables of interest
 - Date of birth, date of death, sex, ethnicity, nationality (i.e., country that issued their passport), visa type, time spent in NZ
 - Immunisation status for selected national immunisation schedule (NIS) vaccines
 - Hospitalisation event for selected VPDs
- Analysis
 - Descriptive analysis comprising of counts and percentages for each cohort based on variables of interest

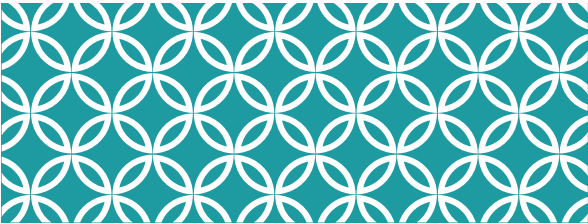
DISCLAIMER

Access to the data presented was managed by Statistics New Zealand under strict micro-data access protocols and in accordance with the security and confidentiality provisions of the Statistic Act 1975. Our findings are not Official Statistics. The opinions, findings, recommendations, and conclusions expressed are those of the author(s)/researchers, not Statistics NZ.

PARTICIPANT FLOW CHART OF ELIGIBLE CHILDREN FOR COHORTS A, B AND C AND EXCLUSIONS



Note: It is a policy of Statistics NZ, in order to protect privacy, that counts are randomly rounded to a number divisible by 3. This means that the numbers of inclusions and exclusions will not necessarily precisely.



RESULTS | Immunisation Coverage

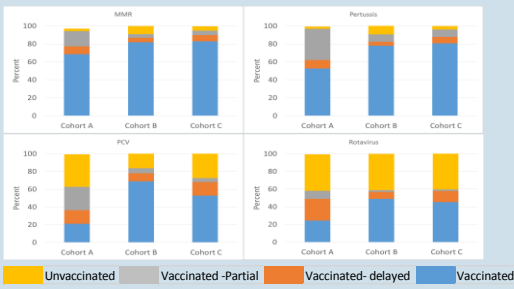
IMMUNISATION COVERAGE

- Selected vaccines:
 - Measles, mumps and rubella (MMR) vaccine (2 doses)
 - Pneumococcal conjugate vaccine (PCV) (3 doses and a booster)
 - Pertussis-containing vaccine (3 doses and a booster)
 - Rotavirus vaccine¹
- ¹Introduced in 2008 Withdrawn in 2014
- Vaccination status defined as:
 - On-time, delayed, partial, unvaccinated or out-of-range
 - Yes, No, Unknown

KEY RESULTS
VACCINATION STATUS

- Not all eligible children included in the National Immunisation Register (NIR)
 - Cohort A: N=34,599, 45.0%
 - Cohort B: N=48,177, 96.1%
 - Cohort C: N=536,805, 94.6%
- Vaccination coverage
 - NZ-born children had higher recorded vaccination rates compared to foreign-born children
 - Foreign-born children had higher recorded partial and delayed vaccinations
 - Lower vaccination rates among those of Pacific ethnicity
 - High rates of not vaccinated among foreign-born children on refugee, Pacific and humanitarian visa schemes

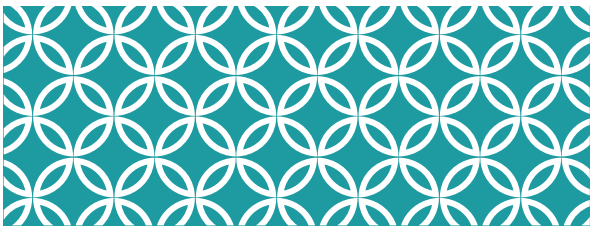
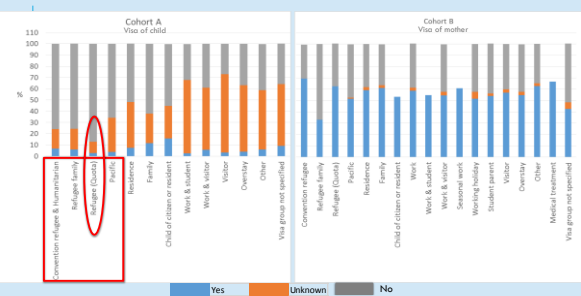
VACCINATION STATUS BY ANTIGEN



VACCINATION BY ETHNICITY



VACCINATION STATUS BY VISA GROUP



RESULTS | VPD-associated hospitalisations

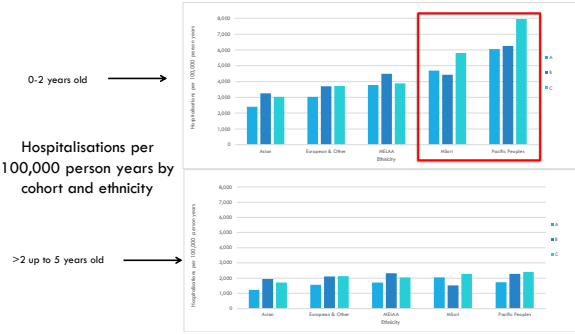
VPD-ASSOCIATED HOSPITALISATION EVENTS

- Selected VPDs*
- 1. Gastroenteritis (all cause, including rotavirus)
- 2. Rotavirus gastroenteritis
- 3. Pneumonia (all cause)
- 4. Measles, mumps, rubella
- 5. Otitis media
- 6. Invasive pneumococcal disease (IPD)
- 7. Haemophilus influenzae type b (Hib)
- 8. Pertussis (whooping cough)

*Diseases of interest are considered to be vaccine-preventable or have some element of vaccine-preventability

KEY RESULTS
VPD-ASSOCIATED HOSPITALISATIONS

- Less than 5% of children were hospitalised
- Majority of disease contribution was from all cause gastroenteritis, all cause pneumonia and otitis media
- Foreign-born children across all ethnicities, except Māori, had lower hospitalisation rates compared to NZ-born migrant and non-migrant children
- Higher hospitalisation rates noted among children of Māori and Pacific ethnicities for the younger age group (0-2 years old)
- Higher hospitalisation rates noted among children on refugee, Pacific and humanitarian visa schemes



Hospitalisations for selected disease with some vaccine-preventable element for Cohorts A and B from January 1, 2006 to December 31, 2015, New Zealand

Visa Group	Hospitalisation	Person-years	Rate per 100,000 person-years
Cohort A (visa of child)			
Work and student	21	2,148	978
Visitor	129	11,352	1,136
Work and visitor	369	29,712	1,242
Other	24	1,674	1,434
Refugee (quota)	21	537	3,911
Pacific	81	3,063	2,644
Refugee family	6	195	3,077
Convention refugee and Humanitarian	33	1,044	3,161
Cohort B (visa of mother)			
Student parent	18	759	2,372
Work and visitor	45	1,893	2,377
Family	372	14,553	2,556
Residence	384	14,634	2,624
Refugee (quota)	24	489	4,908
Pacific	135	2,790	4,839
Refugee family	15	312	4,808
Convention refugee (asylum seekers)	84	1,746	4,811
Humanitarian	9	228	3,947

DISCUSSION & CONCLUSION

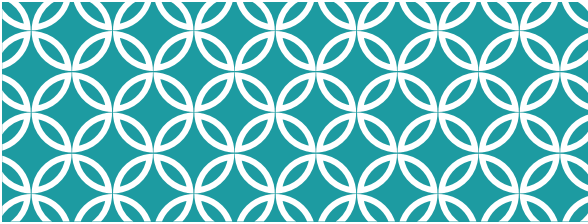
- Immunisation inequities experienced by foreign-born migrant children
- Potential issues with translating and recording overseas vaccinations in the NIR
- Potential issues with access and utilisation of immunisation services
- Higher burden of VPD-associated hospitalisations among NZ-born children
- Need to understand contributing individual and environmental factors
- Need to understand access and utilisation of NZ health services based on visa schemes
- Need to report and monitor vaccination status and VPD-related hospitalisations by migrant and refugee background to inform improvements to policy and practice

ACKNOWLEDGEMENTS

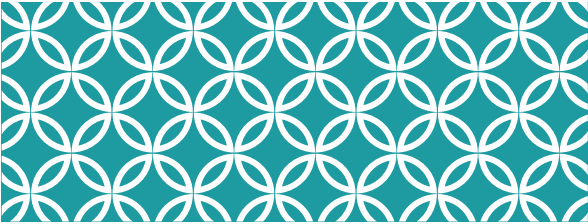
The Red Knot (Huahou) Study is conducted in collaboration with Statistics New Zealand and within the confines of the Statistics Act 1975.

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THANK YOU!



APPENDIX