Growing Up in Ireland
National Longitudinal Study of Children

The influence of caregiver's migration status on child's use of healthcare services

Dr Gretta Mohan, Economic and Social Research Institute - Ireland

12th Annual Research Conference 2020

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Trinity College Dublin
The University of Dublin

An Roinn Leanaí agus Gnóthaí Óige
Department of Children and Youth Affairs

Growing Up in Ireland
National Longitudinal Study of Children

INTRODUCTION

Motivation

- Increase in international migration continues apace
  - Net immigration to Ireland of 9,000 per annum to 2021; 13,000 p.a. thereafter (Wren *et al.*, 2017)
- Accessing healthcare & navigating public services = major challenge for migrants
  - Language, cultural, legal, administrative & financial hurdles
  - Lack of familiarity with healthcare systems & experiences of racism/discrimination (Rechel *et al.*, 2013; Ahmed *et al.*, 2016; Drewniak, Krones and Wild, 2017)
  - On the provider side, challenges in delivering accessible, responsive, effective & culturally competent services
- Providing healthcare for **children** of immigrants identified as a priority health policy (WHO Regional Office for Europe, 2018; Linton *et al.*, 2019)
- Important to understand influence of **migrant background** on the utilisation of healthcare by children of migrant caregivers

Immigration to Republic of Ireland

- R. Ireland = interesting case study: advanced economy for which net immigration is a relatively recent phenomenon (since 1996)
- Non-Irish nationals (country of birth) accounted for **12.2%** of the total population of Ireland in 2018 (Central Statistics Office, 2018)
- There is an emerging cohort of children of migrants living in Ireland for the first time in history

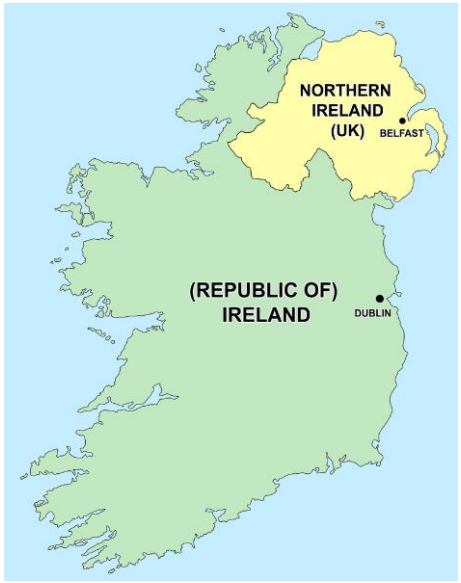
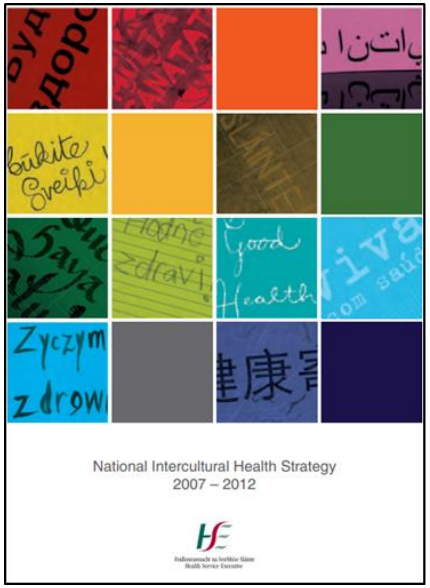
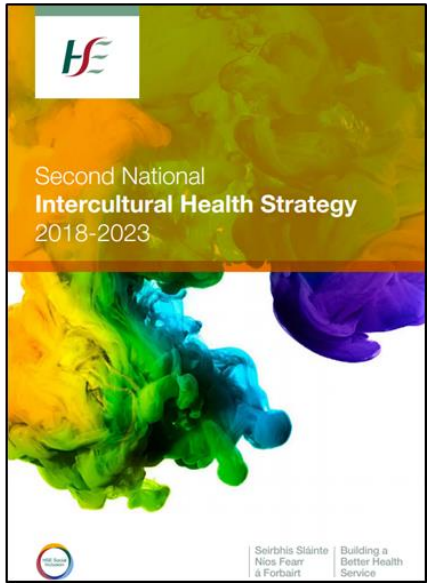


Image: British Medical Journal website

Irish policies concerning migrant health

- Health Service Executive published two ‘Intercultural Health’ strategies

2008	2019
	

- Ireland espouses EU’s ‘migrant friendly hospitals’
- Policies concerning social inclusion & racism

Research questions

1. Does migrant background of a child's primary caregiver affect child's utilisation of healthcare services?

2. Is there a difference in child's healthcare utilisation across different migrant background groups of the primary caregiver?

Image: Irish Times

Growing Up in Ireland
National Longitudinal Study of Children

METHODS

Data

- *Growing Up in Ireland* (GUI) longitudinal study
  - 3 waves Child/1998 Cohort (1st & 2nd generation migrants)
  - 3 waves Infant/2008 Cohort (2nd generation)

Infant Cohort					Child Cohort				
Wave	Year	Age	Sample size	Follow-up from previous wave (%)	Wave	Year	Age	Sample size	Follow-up from previous wave (%)
1	2008/9	9 months	11,134	/	1	2007/8	9 years	8,568	/
2	2010/11	3 years	9,793	88.0	2	2011/12	13 years	7,525	87.8
3	2013	5 years	9,001	91.9	3	2016	17/18 years	6,216	82.6

Outcomes of interest

- Primary caregiver (PCG) asked to recall:
  1. Number of times study child had **visited a GP** in the previous 12 months
  2. Number of **visits to an ED department** of a hospital the child had in 12 months
  3. Number of **nights the child spent in hospital** in 12 months

➢ Count variables (negative binomial models)

Exposure of interest

- PCG asked in each wave:
  - Were you born in Ireland? Yes/No
  - Following 'No': In which country were you born?

- Countries of birth (COB) categorized into 5 mutually exclusive groupings:
  1. Ireland
  2. UK
  3. EU (non-UK)
  4. Non-EU: US, Canada & Australia ('Anglosphere'/developed)
  5. Non-EU: 'Other' e.g. Africa, Asia, Latin America etc.

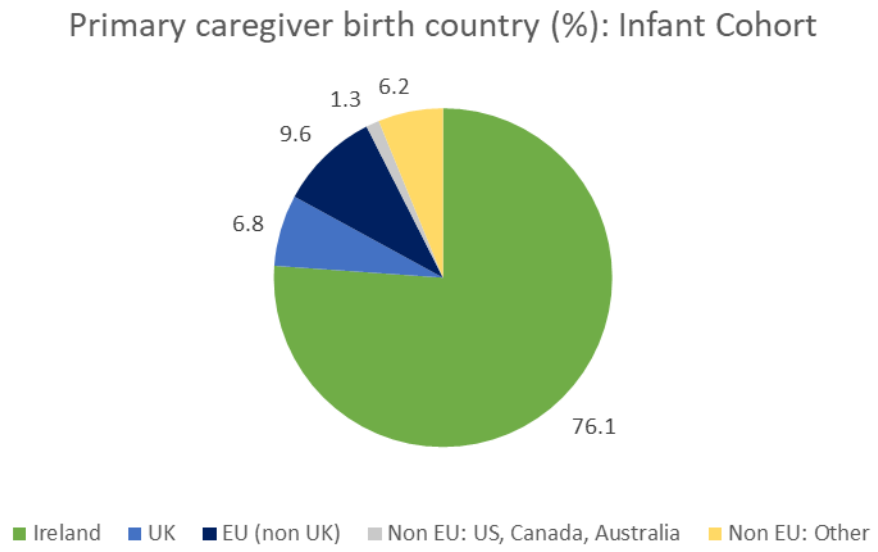
Modelling

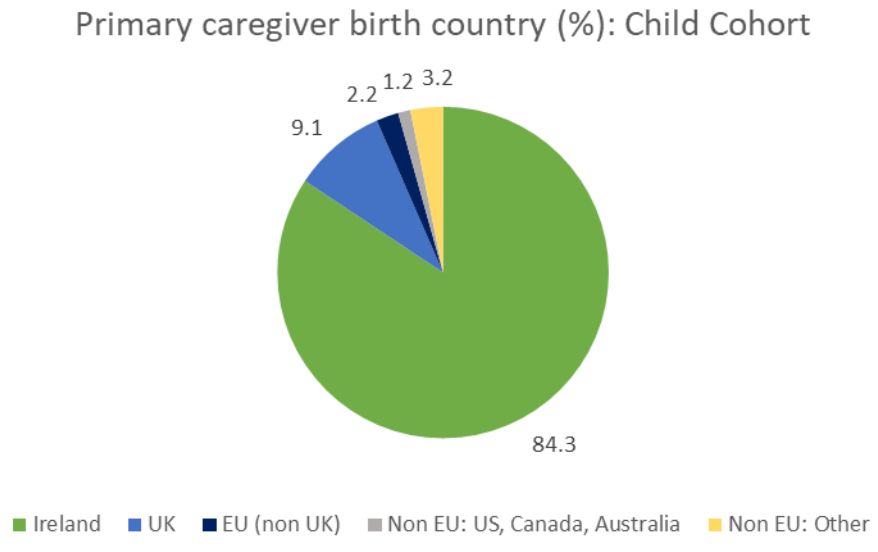
- Account for the following in models (covariates):
  - Migrant status of primary caregiver (5 categories – Ireland base)
  - child gender
  - child health (primary carer's rating of child's health & presence of chronic conditions)
  - PCG's education & employment statuses
  - log of equivalised household income
  - urban location
  - PCG able to read/fill out forms in English
  - public health insurance (i.e. held a medical card), private health insurance
  - PCG's health (self-rated, have a chronic illness & depression)
  - wave dummies

Growing Up in Ireland
National Longitudinal Study of Children

SUMMARY STATISTICS

Country of birth of primary caregiver (wave 1)





Growing Up in Ireland
National Longitudinal Study of Children

MODELLING RESULTS

Results: GP visits

	GP visits	
	Infant Cohort ('08)	Child Cohort ('98)
Base: Primary caregiver is Irish-born		
UK born	0.003 (0.029)	-0.056 (0.037)
EU (non-UK) born	-0.047 (0.026)	-0.083 (0.083)
Non-EU born: US, Canada, Australia	-0.039 (0.067)	0.086 (0.095)
Non-EU born: 'Other'	**-0.083**** **(0.031)**	**-0.310***** **(0.068)**
Observations Individuals	26848 10775	19176 8175

p-values: +p<0.1, *p<0.05; **p<0.01; ***p<0.001.

- Young children (Infant Cohort: 9mt - 5yrs) of whose PCG was born in a Non-EU 'Other' country were estimated to have 0.08 lower visits to the GP, relative to Irish born counterparts (sig. at 1% statistical sig. level).
- For the older Child Cohort: this group had approximately one third of a visit less (significant at the 0.1% level)

Results: ED visits

	ED visits	
	Infant Cohort ('08)	Child Cohort ('98)
Base: Primary caregiver is Irish-born		
UK born	0.064 (0.066)	**-0.195**** **(0.072)**
EU (non-UK) born	**-0.436***** **(0.071)**	-0.303^{+} (0.163)
Non-EU born: US, Canada, Australia	0.049 (0.152)	0.021 (0.180)
Non-EU born: 'Other'	-0.060 (0.074)	**-0.355**** **(0.125)**
Observations Individuals	26848 10775	19176 8175

- Young children of whose PCG was born in an EU (non UK) country were estimated to have 0.44 lower visits to ED, relative to Irish born
- Older Child Cohort: Children of UK born immigrants had 0.2 lower visits to ED; Children of Non EU 'Other', 0.4 lower visits to ED

Results: Hospital nights

	Hospital nights	
	Infant Cohort ('08)	Child Cohort ('98)
Base: Primary caregiver is Irish-born		
UK born	0.021 (0.071)	-0.131 (0.082)
EU (non-UK) born	**-0.335***** **(0.073)**	-0.050 (0.156)
Non-EU born: US, Canada, Australia	0.258+ (0.155)	-0.350+ (0.223)
Non-EU born: 'Other'	-0.045 (0.079)	**-0.587***** **(0.134)**
Observations Individuals	26848 10775	13943 8083

- Young children of whose PCG was born in an EU (non UK) country were estimated to have one-third less of a hospital night, relative to Irish born
- Older Child Cohort: Children of Non-EU: Other born immigrants more than half a night less in hospital.

Growing Up in Ireland
National Longitudinal Study of Children

DISCUSSION

Explaining the results

- For both cohorts', ↓ utilisation of GP services among children born to non-EU 'Other' migrants
  - Suggests some obstacles to access/lack of recourse to services
  - Qualitative research - GP fees, as well as quality of care were issues for immigrants (Migge & Gilmartin, 2011)
  - Appear not to have adopted to the behaviours of the host nation/lack of acculturation
- Infant cohort: ↓ utilisation of ED & in-patient hospital nights for EU (non-UK) groups.
  - EU (non-UK) migrants likely to be recent incomers = lack of acquaintance with healthcare system

Comparison with international literature

- Many host countries & migrants worldwide grapple with similar problems (Rechel *et al.*, 2013; Ahmed *et al.*, 2016; Graetz *et al.*, 2017)
- Results are comparable to those that find migrant children ↓ use of many types of health services (Markkula *et al.*, 2018)
- Results differ from studies which find ↑ consumption of hospital services by migrants (Markkula *et al.*, 2018 ; Graetz *et al.*, 2017)

Image: National Youth Council of Ireland

Policy implications

- Despite policies to promote & facilitate equitable access, disparities in utilisation prevail –> practical translation
- Internationally, few policies/interventions specifically directed at immigrant children (Diaz *et al.*, 2017)
- Potential for:
  - Health Outreach/Integration programmes: aimed at parents, facilitated by healthcare practitioners/professionals
  - Community/school settings: forum for supporting migrant children's health and knowledge: teacher training, therapy, counselling

- Immigration = politically divisive, evidence can inform misconceptions & debate
- COVID-19: migrants more vulnerable – particularly economically?

Image: Northern Ireland New Entrants Service (NINES)

Conclusion

- Children of immigrant families represent a growing, diverse demographic in Ireland
- While policies concerning healthcare access have been published, disparities remain
  - Further work needs to be done achieving objectives outlined
- Facilitating equitable access to & use of, health services for children of immigrants throughout their childhood, adolescence & adult life = an important investment in health & wellbeing of future generations

Q & A

- Comments, suggestions, questions welcome

gretta.mohan@esri.ie

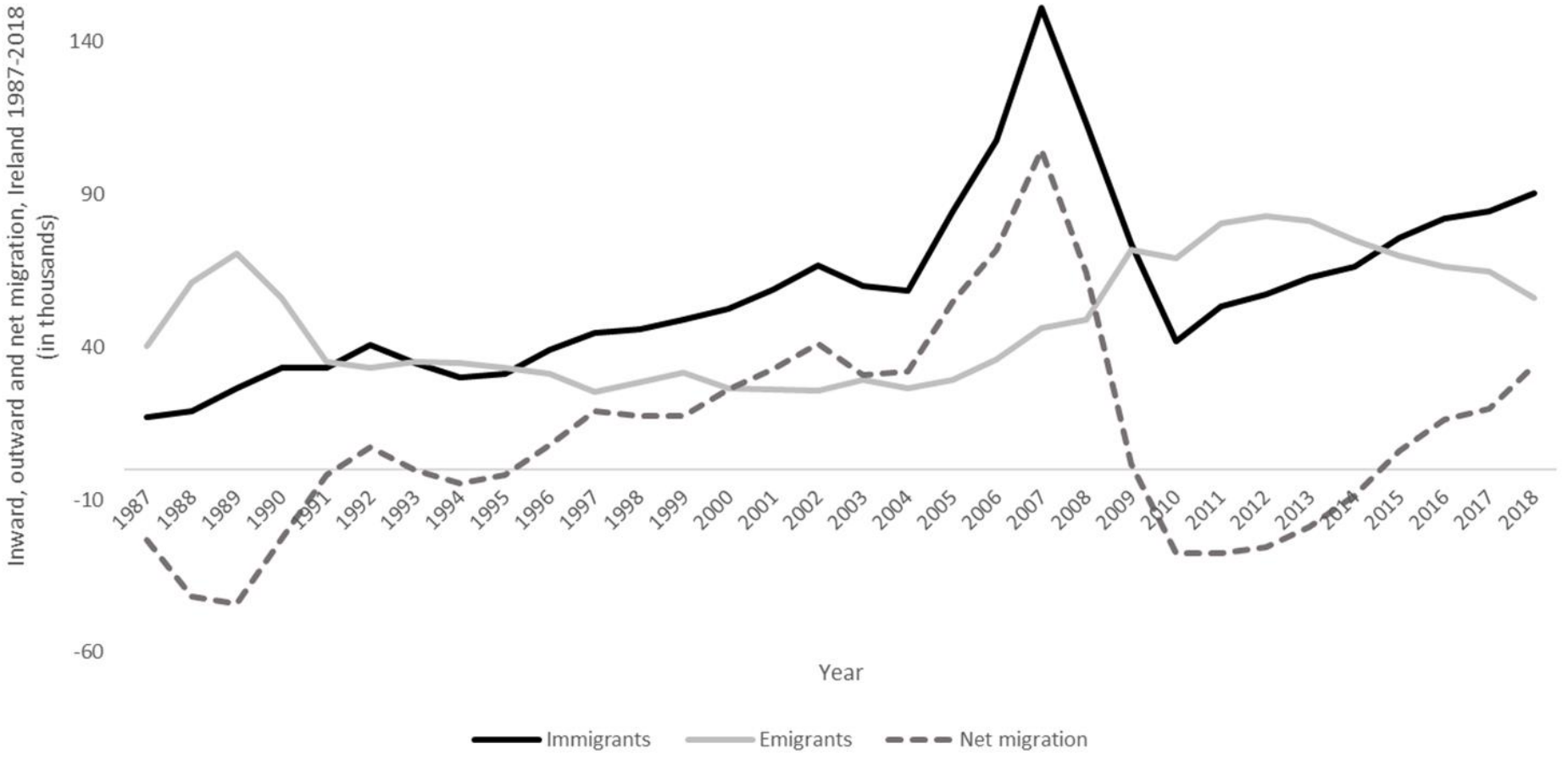
@gretta_mohan

Growing Up in Ireland
National Longitudinal Study of Children

APPENDIX – ADDITIONAL MATERIAL

Inward, outward and net migration, Ireland 1987-2018

(Central Statistics Office, 2018)



Countries of birth, primary caregiver

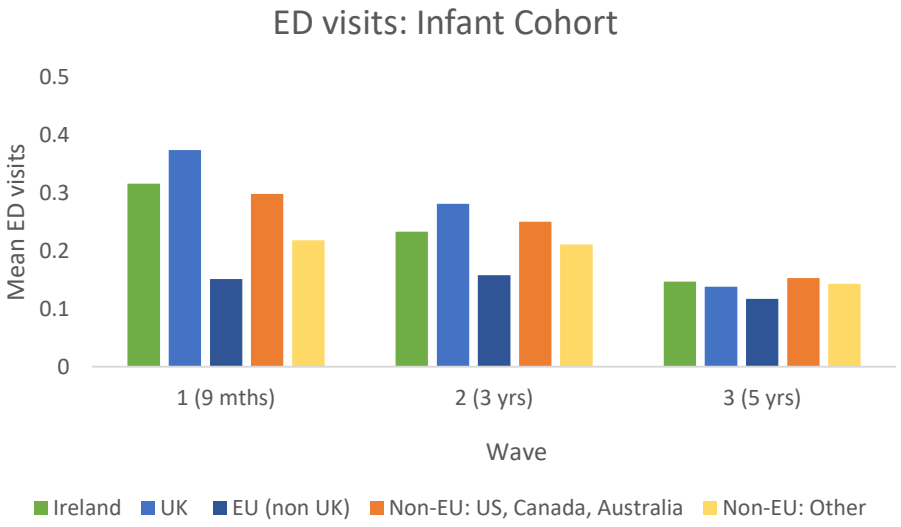
	Poland		Nigeria		Lithuania		Latvia		USA		India		US, Australia or Canada	
Wave 1	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**	**#**	**% (Non-Irish born)**
Cohort														
Infant	452	**19.2**	152	6.6	120	5.1	74	3.1	71	3.0	69	2.9	101	**4.3**
Child	38	**3.3**	54	4.8	-	[<2]	-	*	62	5.5	-	[<2]	87	**7.7**

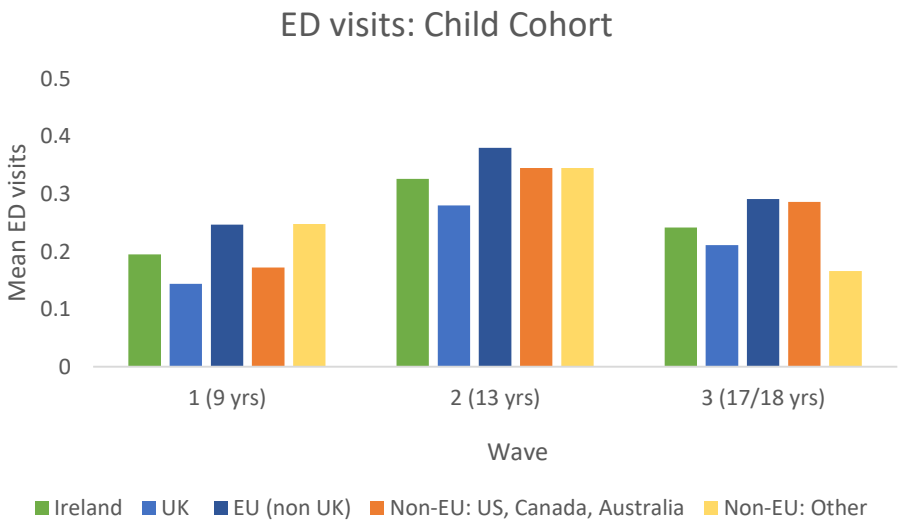
To avoid disclosure: cell sizes with numbers <30 represented as –
* Number of observations used to calculate this % too small (<10)

Characteristics of sample (wave 1)

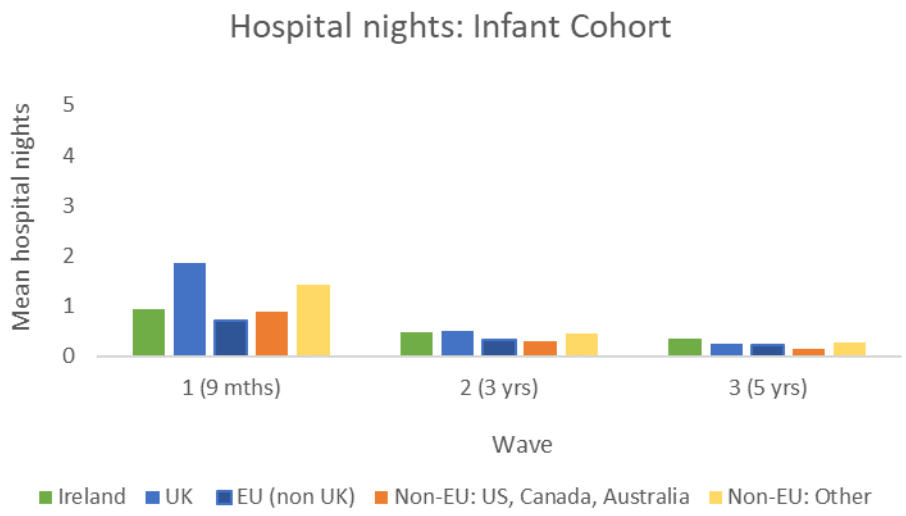
	Infant Cohort					Child Cohort				
Observations (wave 1)	**9844**					**7251**				
	Country of origin					**Country of origin**				
Variable (%)	**Ireland**	**UK**	**EU (non-UK)**	**Non-EU: US, Australia, Canada**	**Non-EU: Other**	**Ireland**	**UK**	**EU (non-UK)**	**Non-EU: US, Australia, Canada**	**Non-EU: Other**
Child female	48.6	50.1	46.9	47.6	51.1	51.3	53.2	52.5	54.0	46.1
Child rated 'very healthy, no problems'	83.2	81.3	81.9	79.0	84.0	75.2	75.5	70.9	73.6	70.9
Child chronic conditions	25.3	24.4	19.8	25.8	16.4	10.0	8.8	9.5	12.6	9.1
Primary caregiver (PCG) employed	62.4	48.5	45.7	59.7	38.4	60.2	55.0	63.9	62.4	56.5
PCG degree	34.4	37.4	42.2	69.4	44.4	25.4	29.9	46.8	56.3	51.3
PCG able to read/fill out English forms	98.2	98.5	86.5	99.2	92.8	98.0	98.2	91.8	98.9	94.3
Equivalised household income (mean)	22823	21209	15816	25605	15520	21843	20864	19904	25713	18337
Household size (mean)	4.1	4.2	3.8	4.0	4.3	4.8	4.8	4.3	4.9	4.9
Medical card	23.2	28.6	34.2	14.5	48.4	16.5	23.1	28.5	14.9	37.8
Private health insurance	63.8	54.8	28.7	70.2	23.2	68.2	60.7	44.9	74.7	35.7
Urban location	40.8	33.9	56.7	45.2	**75.5**	45.6	33.8	57.6	40.2	**69.1**
PCG ill/fair health	6.5	7.0	3.8	6.5	8.5	5.4	7.7	7.6	8.0	7.4
PCG chronic illness	11.7	14.9	7.7	16.1	8.0	12.7	13.7	14.6	13.8	12.2
PCG depression	10.8	12.5	8.8	8.9	10.5	7.5	9.4	11.4	8.0	7.8
Observations	7493	672	944	124	611	6114	662	158	87	230
% sample	76.1	6.8	9.6	1.3	6.2	84.3	9.1	2.2	1.2	3.2

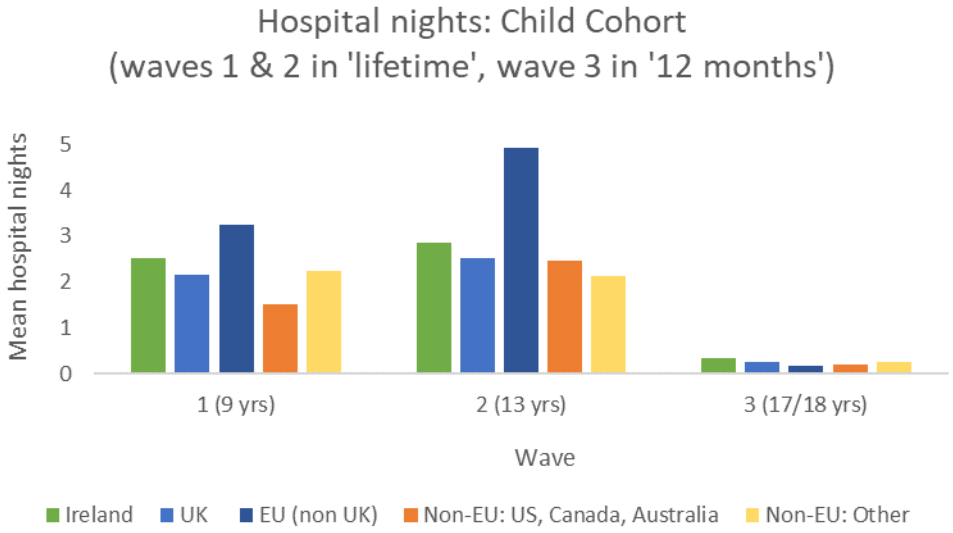
Summary statistics – ED visits





Summary statistics – Hospital nights



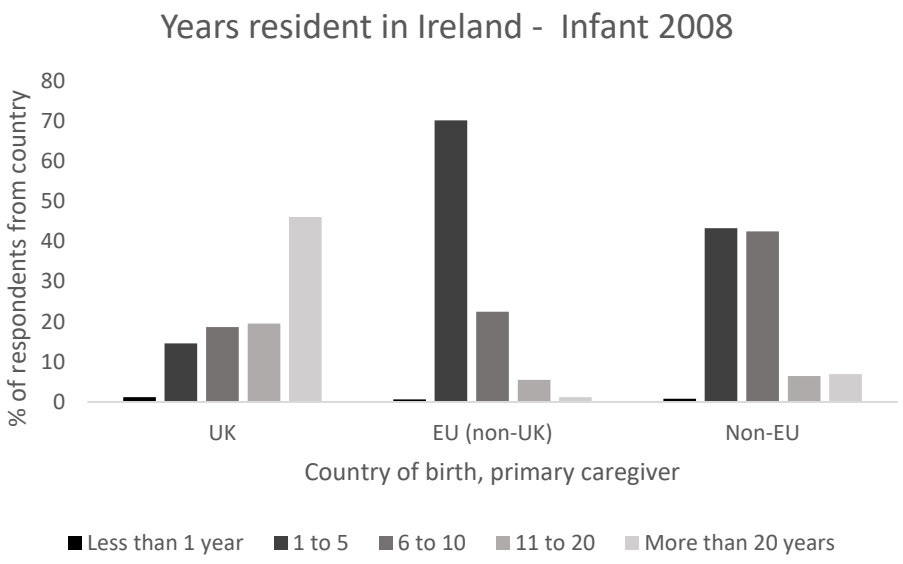


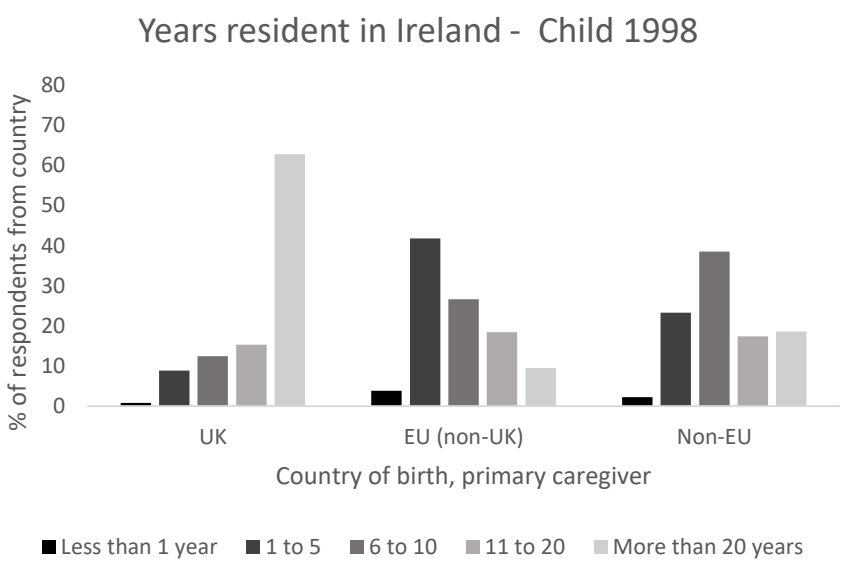
Country of birth, child

Child born in Ireland											
		Ireland		Outside Ireland		UK		EU (non-UK)		Non-EU	
Wave	Obs	#	% sample	#	% sample	#	% (Non-Irish born)	#	% (Non-Irish born)	#	% (Non-Irish born)
Infant cohort											
1	9846	9748	99.0	98	1.0	*	*	*	*	*	*
Child cohort											
1	7250	6443	88.9	807	11.1	376	46.6	122	15.1	309	38.3

To avoid disclosure: cell sizes with numbers <30 represented as –
* Denominator less than 100

Years in Ireland, primary caregiver (wave 1)





Citizenship, primary caregiver

Wave	Irish citizen (%)	Born in Ireland (%)
Infant cohort		
1	83.0	76.1
2	84.4	76.5
3	88.1	77.7
Child cohort		
1	93.2	84.3
2	95.2	84.4
3	96.3	84.8

Irish evidence

- Villarroel et al. (2019) - Scoping review of Irish studies on migrant health
  - Growing consideration
  - Methodological quality of studies is low - evidence from research where the primary focus is not migrant health
- Healthy Immigrant effect (HIE)?

  Immigrants may have a health advantage over the local population for reasons such as a younger age profile, greater mobility etc.
  - Only limited evidence of HIE (Nolan, 2012)
  - Health of immigrant children not found to differ from native peers (Molcho, Kelly and Gabhainn, 2010). Though, fared worse on wellbeing measures.
- Caregiving behaviours:
  - Brick and Nolan (2014) - 46% of Irish-born mothers breastfed v. 84% of non-Irish
  - Divergence not due to observables - unexplained, suggesting strong cultural and/or attitudinal differences

Irish evidence: qualitative evidence

- Migge and Gilmartin (2011) & Stan (2015) found that newcomers lack information on the organisation of, and entitlements to, healthcare
- Opted to avail of care in their homeland - issues of:
  - Affordability (high costs of GP services, and, hospital-related charges)
  - Quality of care - insufficient time with doctors, interaction was hierarchical, lacking social sensitivity
- Few cited language/culture as reasons for not accessing services (though, feelings of 'alienation')
- Some sought medics from own country practicing in Ireland to overcome language difficulties

Strengths and Limitations

Strengths

- GUI large, representative sample, double cohort
- Longitudinal
- Countries of origin = categorisation
- Wide range of confounders adjusted for, improving on the quality of other studies (Markkula et al., 2018)

Limitations

- Motivation for migration? e.g. economic/educational, family, forced
- Especially vulnerable groups e.g. refugees, asylum seekers & those undocumented likely to be omitted - drawing on child benefit register & school lists = families not on these lists excluded
- Aggregation of 'non-EU' countries may mask differences in healthcare utilisation across a geographically diverse sample (sample power)

Research directions

- Understand challenges in the implementation/translation of policies to practice & patient outcomes
- Reasons for divergent healthcare utilisation patterns of children from various groups of foreign-born parents?
- For Ireland, use of health services by the country's 1st large cohort of 2nd-generation migrants when they become independent adults also merits empirical study: assimilation, integration & acculturation

Modelling

- Count dependent variables with overdispersion (variance > mean)
- Pooled model
- Panel negative binomial of GP/ED/hospital nights:

- $Pr(Y_{it} = y_{it} \mid x_{it}, \delta_{it}) = \frac{\Gamma(y_{it}+v_{it})}{\Gamma(y_{it}+1)\Gamma(v_{it})}\left(\frac{v_{it}}{v_{it}+u_{it}}\right)^{v_{it}}\left(\frac{u_{it}}{v_{it}+u_{it}}\right)^{y_{it}}, \quad y_{it} = 0,1,2, \ldots$

- Where: Γ gamma distribution function
  - y_{it} annual number of GP/ED visits/hospital nights
  - $u_{it} = exp(x_{it}\beta)$
  - $v_{it} = \alpha^{-1}exp(x_{it}\beta)$ [dispersion parameter] - when $\alpha = 0$ = Poisson specification
  - x_{it} is the vector of explanatory variables
  - β parameters to be estimated

- Random effects: dispersion parameter allowed to vary from group to group
- Random effects with correction for correlated random effects - add vector of 'mean' covariates (Wooldridge, 2002; Nolan, 2007)

Model notes

- Negative binomial panel regression, estimates are marginal effects. Standard errors in parentheses.
- Modelling on complete cases.
- p-values: +p<0.1, *p<0.05; **p<0.01; ***p<0.001.
- Multiple hypothesis testing p-value threshold with 3 outcomes: p < 0.017: those which survive in bold font.
- Models adjusts for migrant status (results displayed), gender of child, log of equivalised household income, mother's education, mother's employment status, urban residence, household size, medical card status (i.e. public health insurance), private health insurance, whether the child is rated as ill, whether the child has a chronic health condition, mother has ill health, mother has chronic condition, maternal depression and wave of the survey.

References used

Wren et al. (2017) Projections of demand for healthcare in Ireland, 2015-2030: First report from the Hippocrates Model. Dublin: Economic and Social Research Institute.

Rechel, B. et al. (2013). Migration and health in an increasingly diverse Europe. *The Lancet*, 381(9873), pp.1235–1245.

Ahmed, S. et al. (2016). Barriers to Access of Primary Healthcare by Immigrant Populations in Canada: A Literature Review. *Journal of Immigrant and Minority Health*, 18(6), pp.1522–1540.

Diaz, E. et al. (2017). Interventions to improve immigrant health. A scoping review. *European Journal of Public Health*, 27(3), pp.433–439.

References used (2)

Central Statistics Office. (2018). *Population and Migration Estimates*. Cork: Central Statistics Office.

(Markkula *et al.*, 2018 ; Migge, B. and Gilmartin, M. (2011). Migrants and healthcare: Investigating patient mobility among migrants in Ireland. *Health and Place*, 17(5), pp.1144–1149.

Graetz, V. et al. (2017). Utilization of health care services by migrants in Europe - A systematic literature review. *British Medical Bulletin*, 121(1), pp.5–18.

Health Service Executive. (2012). *National Intercultural Health Strategy 2007-2012*. Dublin: Health Service Executive.

Health Service Executive. (2019). *Second National Intercultural Health Strategy 2018-2023*. Dublin: Health Service Executive.

References used (3)

WHO Regional Office for Europe. (2018). *Health of refugee and migrant children*. Copenhagen: World Health Organization.

Linton, J.M. et al. (2019). Providing care for children in immigrant families. *Pediatrics*, 144(3).

Drewniak, D., Krones, T. and Wild, V. (2017). Do attitudes and behavior of health care professionals exacerbate health care disparities among immigrant and ethnic minority groups? An integrative literature review. *International Journal of Nursing Studies*, 70, pp.89–98.