

Variation in Mortality by Country of Birth

Key Findings:

- over 90% of the study cohort were born in Northern Ireland (NI), 4.2% were born in England, 2.7% in the Republic of Ireland (RoI), 1.2% in Scotland and 0.2% in Wales;
- indicators of socio-economic status showed a mixed picture, however those born outside of NI tended to live in more affluent areas;
- the cohort recorded a total of 39,511 deaths: cancer accounted for 49.1% of these deaths and ischemic heart disease (IHD) accounted for almost 25% of deaths;
- compared to the NI born, the Scottish born had higher all-cause mortality rates, while other migrant groups had lower mortality – adjustment for demographic, socio-economic and health status resulted in the excess mortality risk among the Scottish born increasing;
- compared to the NI born: risk of IHD was lower for the RoI and English born, migrants from outside the British Isles recorded lower levels of IHD and stroke, and the Scottish born had significantly higher rates of IHD and an elevated risk of respiratory death.

BACKGROUND TO THE RESEARCH

Studies into health differences between different migrant groups can provide information on genetic and /or environmental factors that contribute to disease and ill-health. This research focuses on the health of migrants to NI in response to recent increases of levels of immigration and to (1) determine if migrants to NI are more or less healthy than the NI born population and (2) examine whether the health status of migrants most closely resembles their country of birth/origin or country of destination.

METHODOLOGY

A longitudinal study was conducted using the Northern Ireland Mortality Study (NIMS) to link deaths from 2001-2007 to a cohort group aged 25-74, enumerated at the 2001 Census. Country of birth (CoB) was determined using the 2001 Census question on CoB which allowed for the following responses: Northern Ireland, England, Wales, Scotland, Republic of Ireland and elsewhere – with those born 'elsewhere' asked to include their CoB.

Study members were analysed in relation to census-based demographic characteristics (including age, sex, marital status and socio-economic status) and self-reported health status as an independent contribution to mortality risk. The income domain of the NI Multiple Deprivation Measure 2005¹ was also used to look at area-level disadvantage. Cox Proportional Hazards modelling was used to detect differences in mortality (all cause and cause specific) by CoB over the period.

¹ See: http://www.nisra.gov.uk/deprivation/nimdm_2005.htm

POLICY IMPLICATIONS

- At the 2001 Census, the majority of migrants were from either the rest of the UK or the RoI. Longer periods of follow-up will allow more robust analysis for all migrant groups. This will help explain differences and establish appropriate distributions of healthcare resources.
- The 2011 Census includes a question about the date of entry to the country which will provide more information on CoB for observed patterns of illness. The recent increase in immigration in recent years will be recorded and may have implications for NI's health and demographic profile and future health system needs.
- Given the geographical segregation along cultural and religious lines in NI, it will be useful to monitor how migrants follow these trends to help identify areas with greater need and better target public health interventions.

Table: Mortality by Country of Birth (Fully Adjusted Cox Proportional Hazards Ratios & 95% Confidence Intervals)

Country of Birth	All Deaths	Model
Northern Ireland	36,350	1.00
England	1,064	0.96 (0.90, 1.02)
Scotland	465	1.15 (1.05, 1.27)**
Wales	57	0.96 (0.74, 1.26)
Republic of Ireland	1,188	0.92 (0.87, 0.98)**
Other	387	0.93 (0.84, 1.03)
	IHD	Stroke
Northern Ireland	1.00	1.00
England	0.85 (0.73, 0.99)*	1.17 (0.93, 1.48)
Scotland	1.42 (1.17, 1.72)**	0.74 (0.46, 1.17)
Wales	0.83 (0.43, 1.60)	2.71 (1.41, 5.21)**
Republic of Ireland	0.74 (0.64, 0.86)***	0.79 (0.62, 1.01)
Other	0.74 (0.57, 0.97)*	0.58 (0.35, 0.96)*
	Respiratory	Cancer
Northern Ireland	1.00	1.00
England	0.89 (0.71, 1.11)	1.02 (0.92, 1.12)
Scotland	1.29 (0.97, 1.72)	0.98 (0.83, 1.15)
Wales	1.26 (0.57, 2.81)	0.86 (0.57, 1.34)
Republic of Ireland	0.88 (0.73, 1.06)	1.04 (0.95, 1.13)
Other	1.07 (0.77, 1.47)	0.99 (0.85, 1.16)

1.00 = reference category, <1.00 = lower risk, >1 = higher risk
Statistical significance: * <0.05 ** <0.01 *** <0.001

NORTHERN IRELAND MORTALITY STUDY (NIMS)

The NIMS, a sister study to the Northern Ireland Longitudinal Study (NILS), is a record linkage study which links 2001 Census returns to subsequently registered mortality data. Both studies allow exploration of health and socio-demographic characteristics to provide an insight into the status of the NI population. The NILS Research Support Unit provides information, advice and support for potential academic and government research users of the NILS and NIMS databases. For further information please go to our website at www.nils-rsu.census.ac.uk.

This research brief is based on Connolly S, Rosato M, Kinnear H & O'Reilly D (2011) *Variation in mortality by country of birth in Northern Ireland: A record linkage study*. Health & Place.
For further information please go to: [NILS RSU Publications](http://www.nils-rsu.org.uk).