Northern Ireland Longitudinal Study
Research Brief 9 – March 2012

Breast Screening Uptake in Northern Ireland

Key Findings:

- this linkage study was based on 11,931 women aged 48-52 who had been invited for their first routine screen and 25,128 women aged 53-64 who had been invited for a subsequent screen during the period 2001-2004;
- analysis of uptake for breast screening showed that 70.3% of women in the Belfast Metropolitan Urban Area (BMUA) attended a first screen and 67.4% attended a subsequent screen: the equivalent figures for rest of NI were 77.6% and 79.2% respectively;
- attendance was lower for women who had: never married, poor general health, rented rather than owned their accommodation and no access to a car; and
- analysis presented in Table, which takes into account demographic and socio-economic differences between women, shows that those in the BMUA, compared to the rest of NI, were less likely to attend both for a first screening and for a subsequent screening.

BACKGROUND TO THE RESEARCH

Studies have shown that there is significant variation in uptake of cancer screening services across geographical areas in the UK – in particular with lower rates for larger cities. This research looks at both the contextual (area-level) and compositional (population) factors to quantify variations in uptake across Northern Ireland (NI).

METHODOLOGY & RESULTS

A Distinct Linkage Project was designed based on linked data from the Northern Ireland Longitudinal Study (NILS) and the National Breast Screening System (NBSS). An anonymised project-specific dataset was created (using one-way encryption methodology to ensure confidentiality) and accessed within a secure setting managed by the Northern Ireland Statistics and Research Agency.

The NILS dataset included 2001 Census information associated with screening uptake (age, marital status, social class and self-reported morbidity) and urban and rural indicators to compare the BMUA with the rest of NI. The NBSS provided information on the total number of women who were invited, and subsequently attended, a breast screening during a three year cycle from 2001-2004.

Multivariate logistic regression was used to explore the relationship between uptake of breast screening, area-level variables and demographic and socio-economic characteristics. Interactions between these demographic and socio-economic factors and area of residence were also tested using the Likelihood Ratio test.

Table: Likelihood of Women Attending a Breast Screen in BMUA Compared to the Rest of NI (Odds Ratios[1] & 95% Confidence Intervals)

	First Screen	Subsequent Screen
Rest of NI	1.00	1.00
BMUA Unadjusted	0.68 (0.63, 0.75)	0.55 (0.51, 0.58)
BMUA (i): adjusted for age & marital status	0.70 (0.64, 0.77)	0.56 (0.53, 0.60)
BMUA (ii): as (i) plus health status	0.71 (0.65, 0.77)	0.57 (0.53, 0.60)
BMUA: as (ii) plus socio-economic status	0.72 (0.66, 0.78)	0.58 (0.55, 0.62)

[1] Odds ratios are provided to allow comparison between groups where one group is always set as a reference category.

1.00 = reference category i.e. rest of NI
<1.00 = less likely to attend a screening than the reference category
>1.00 = more likely to attend a screening than the reference category

POLICY IMPLICATIONS

- Uptake for breast screening in NI is below the national target of 80% and uptake around BMUA is substantially lower than in other parts of the country. Tackling the reduced uptake of screening for breast cancer in cities should be a major public health concern: the effect is large as 35% of women of breast screening age live in BMUA.
- The research results illustrate a systemic effect which may relate to the organisation of services such as address inaccuracies within the call-recall system used to invite women to attend screenings.
- A disproportionate number of those who are deprived live in cities, therefore any changes that would result in increasing screening uptake in cities may help reduce socio-economic inequalities in cancer screening.

NORTHERN IRELAND LONGITUDINAL STUDY (NILS)

The NILS, a sister study to the Northern Ireland Mortality Study (NIMS), is a large-scale record linkage study based on an approximate 28% sample of the Northern Ireland population (c. 500,000 individuals). Both studies allow exploration of health and socio-demographic characteristics.

The **NILS Research Support Unit** provides information, advice and support for users of the NILS and NIMS databases. Contact us at: www.nils-rsu.census.ac.uk.

This research brief is based on Kinnear H, Rosato M, Mairs A, Hall C & O'Reilly, D (2011) *The low uptake of breast screening in cities is a major public health issue and may be due to organisational factors.* The Breast.

For further information please go to: NILS RSU Publications.