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### What is already known on this topic

Sex chromosome anomalies as a group are as common as Down's syndrome, but most affected individuals are never identified

Affected fetuses are sometimes identified when women have prenatal karyotyping for Down's syndrome

The diagnosis is almost always first disclosed to parents by staff from the obstetric unit, because there has not previously been an indication for a clinical genetics referral

### What this study adds

Some obstetric units have no established protocol for communicating results to parents

Some health professionals working in an obstetric setting know little about the effect of sex chromosome anomalies

Some parents are given misleading information when they are first informed that their fetus has a sex chromosome anomaly

and who informed them of the results. Although there were some examples of excellent counselling, there were other examples of grossly inadequate or frankly misleading information being given. We can only speculate about how this variation might affect parents as our study was not designed to determine associations between the quality of counselling and the outcome of the pregnancy or subsequent emotional wellbeing of the parents.<sup>12-17</sup> Some units providing prenatal testing services are not adhering to the published guidelines concerning the provision of information (box).<sup>18</sup>

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ing the results, writing the paper, and will act as guarantor. SH helped design the study, interpret the results, and write the paper. JL helped design the study and interpret the results. TMM helped design the study, interpret the results, and write the paper.

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## Mortality of third generation Irish people living in England and Wales: longitudinal study

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We previously reported high mortality and high incidence of cancer in second generation Irish people (children of Irish migrants) living in England and Wales.<sup>1,2</sup> In this study we examine the mortality of third generation Irish people (grandchildren of Irish migrants) living in England and Wales.

### Method and results

The longitudinal study by the Office for National Statistics is a record linkage study of a 1% representa-

tive sample of the population of England and Wales. The sample was first extracted from the 1971 census and is updated with new births and immigrants. Information from censuses and registrations of vital events is linked to the records of study members.<sup>3</sup>

First generation Irish classified by country of birth covered those people born in Northern Ireland and the Irish Republic. For second and third generations, only those people with parents and grandparents born in the Republic of Ireland could be identified because parents born in Northern Ireland

Socioeconomic distributions in 1971 and hazard ratios for all cause mortality 1971-97, for first, second, and third generations of Irish people living in England and Wales (1971 Office for National Statistics Longitudinal Study cohort)

	Socioeconomic circumstances†					Mortality		
	Access to cars (%)		Housing tenure (%)			Adjusted for age (hazard ratio 95% CI)	Deaths	Adjusted for age, housing, access to cars (hazard ratio 95% CI)
	No	Yes	No	Owner occupied	Renting			
<b>Males</b>								
Other	171 533	65	32	51	47	1.00	24 829	1.00
First generation born Northern Ireland	735	50	45	38	57	1.27* (1.11 to 1.47)	195	1.17* (1.02 to 1.35)
First generation born Irish Republic	2 052	41	54	38	58	1.13* (1.04 to 1.23)	556	1.02 (0.93 to 1.11)
Second generation Irish	4 564	50	47	41	57	1.29* (1.18 to 1.41)	503	1.23* (1.13 to 1.34)
Third generation Irish	2 513	61	39	48	51	1.31* (1.06 to 1.63)	86	1.26* (1.02 to 1.56)
<b>Females</b>								
Other	166 861	64	34	51	47	1.00	16 110	1.00
First generation born Northern Ireland	726	53	44	44	53	1.25* (1.04 to 1.49)	125	1.19 (0.99 to 1.41)
First generation born Irish Republic	2 224	45	51	42	53	1.14* (1.03 to 1.26)	386	1.05 (0.95 to 1.16)
Second generation Irish	4 420	49	49	44	54	1.21* (1.09 to 1.36)	314	1.17* (1.05 to 1.31)
Third generation Irish	2 384	61	39	48	52	1.55* (1.17 to 2.05)	50	1.49* (1.13 to 1.97)

†Cell percentages for housing tenure and car access do not add to 100% as non-private households are not shown.

\*P<0.05.

were coded as being born in the United Kingdom. Second generation Irish had at least one parent born in Ireland and the third generation had neither parents born in Ireland but one or more grandparents born there.

Only those people aged under 55 in 1971 were included because of the young age distributions of the second and third generations: of all ages 73% (3799/5213) of the third generation and 42% (4931/11 597) of the second generation were aged under 15, compared with 3% (199/11 597) of the first generation from the Irish Republic and 23% (112 442/479 466) of all other study members. Most of the first generation were aged 25-55. Among those under 55 in 1971, loss to follow up was highest for first generation Irish (11% (187/1648) for those from Northern Ireland, 18% (943/5219) for those from the Republic of Ireland, 8% (808/9792) for second generation Irish, 6% (312/5209) for third generation Irish, and 5% (17 134/355 528) for all other study members). These people were excluded from the final sample used. See table for final sample aged under 55 years in 1971 and who were not lost to follow up.

Access to cars and housing tenure at the 1971 census were used as markers of socioeconomic position. Age adjusted hazard ratios for the period 1971-97 were derived by using Cox regression.

The table shows that, compared with all other study members, the first generation was most disadvantaged and the third generation least disadvantaged. Mortality was higher than that of all other study members across all generations, increasing with each successive generation. Mortality was no longer higher among first generation Irish from the Irish Republic after adjusting for differences in housing tenure and car access.

## Comment

Although socioeconomic disadvantage lessened between generations of Irish people living in England and Wales, mortality of the third generation remained high. Housing tenure and car access were used as a proxy for socioeconomic status, and it is likely that

these factors would not have accounted for all of the socioeconomic differences between the generations. Although for second and third generation Irish factors such as the negative perception of "Irishness", with consequent unfulfilled expectations and lack of control in these people's environments and lifestyles are likely to be important contributors, selection effects are important in understanding the high mortality of the first generation.<sup>4</sup>

The evolution of ethnic identity through generations is influenced by the interaction with the social, economic, and political environments of the host community. The consequences of these changes over generations on health are poorly understood and may have important implications for issues related to diet, smoking, health behaviours, and work exposures. A recent survey of men in north London provides some information but the sample was too small to examine generational differences with confidence.<sup>5</sup> The inclusion of an "Irish" category in the 2001 census is a step forward because, for the first time, there will be a national count including all generations and it will also make ethnic monitoring of Irish people in the NHS possible. Regrettably, it will not be possible to identify Catholic Irish, because the category proposed is "Christian" if the question on religion is included in the census.

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