

Hurling Alone? How Social Capital Failed to Save the Irish From Cardiovascular Disease in the United States

C. Cecily Kelleher, MD, MPH, John Lynch, PhD, MEd, MPH, Sam Harper, MPH, Joseph B. Tay, MB, BCh, BAO, and Geraldine Nolan, MSc, Dip Dietetics

Increasing evidence indicates that a full etiological explanation for major adult chronic diseases must include consideration of influences across the life course.^{1–4} Current rates of coronary heart disease in Ireland and parts of Scotland with high rates of Irish immigration rank among the highest in the developed world,⁵ and rates are twice the European Union average in the Republic of Ireland.⁶ In addition, Irish immigrants to the United Kingdom retain an overall increased risk of ill health for at least 2 subsequent generations,^{7,8} which can be partly accounted for by lifestyle and social conditions.⁹

In this article we examine how the early- and later-life conditions of the Irish, one of the major ethnic groups to immigrate to the United States in the 19th and early 20th centuries, contributed to their overall patterns of cardiovascular mortality. Some 4.5 million Irish immigrated to the United States over a period of 80 years, particularly after the great Irish famine of 1847.¹⁰ This famine was the most devastating example in modern European history of the acute effects of a crop failure, resulting directly and indirectly in a halving of Ireland's population. The cultural story of these Irish immigrants has been documented in remarkable detail.^{11–15} The Irish settled throughout the United States, and particularly in large East Coast cities. When a general ancestry question was reintroduced into the United States Census in 1980, 40.2 million people, or 20.64% of the White/European population, declared themselves to be of Irish ancestry.¹⁰ Despite criticisms of the reliability of this measure,¹⁶ demographic analysis indicates that this number is likely to be reasonably accurate.

METHODS

Ethnic Origin and Mortality in US Census Vital Statistics Records

In a 1933 report, considerable and unexplained variation in infant mortality rates across

Objectives. We performed a historical review of cardiovascular risk profiles of Irish immigrants to the United States, 1850–1970, in regard to lifestyle, socioeconomic circumstances, and social capital.

Methods. We analyzed US Census data from 1850–1970, area-based social and epidemiological data from Boston, data from Ireland's National Nutrition Surveillance Centre, and literature on Irish migration.

Results. The Irish were consistently at increased risk of cardiovascular diseases, a risk that related initially to material deprivation, across the life course of at least 2 generations.

Conclusions. The principal difference between the Irish and other disadvantaged immigrant groups, such as the Italians, was dietary habits influenced by experiences during the Irish famine. Although there was a psychosocial component to the disadvantage and discrimination they experienced as an ethnic group, the Irish also exhibited strong community networks and support structures that might have been expected to counteract discrimination's negative effects. However, the Irish's high levels of social capital were not protective for cardiovascular disease. (*Am J Public Health.* 2004;94:2162–2169)

Boston's census tracts was found.¹⁷ In 1985, findings from the Ireland–Boston Diet Heart Study¹⁸ were published. These 2 reports constitute the tip of the iceberg of what is a largely neglected story. Both used a unique and extensive US vital statistics database to examine ethnic variations in disease risk.^{19–31} For this analysis we reviewed all hard-copy census reports and undertook a literature search for related publications, with a particular focus on the City of Boston. From 1850, country of nativity was recorded routinely as part of the US Census, and from 1870 to 1970, nativity of parents was recorded as well.²⁰ (The exact terminology varies from census to census, as we will present, but respondents may be categorized according to [a] whether they were native born vs foreign born, [b] whether they were of native-born vs foreign-born parentage, or [c] their country of origin.) Furthermore, both all-cause and disease-specific mortality were recorded, first retrospectively through census enumeration and then through state-level registration processes that achieved national coverage by the 1930s. It is possible, therefore, to document the variation in disease patterns related to country of origin for immigrants and their first-generation American

children. Because country-of-nativity questions deal specifically with the experiences of respondents or their parents, they are more precise than the recently employed general ancestry question.^{16,31} An examination of each of these original census records revealed that the Irish had excess mortality throughout the 1850–1970 period, particularly from diseases of the heart and circulatory system. Readers should note that processes of classification of circulatory diseases were not standardized at the end of the 19th and the beginning of the 20th centuries—diagnostic criteria developed over this period.¹⁹ Thus, it is unavoidable that we refer to several classifications of circulatory diseases (“circulatory disease,” “cerebrovascular disease,” etc.) as they were used in the different historical reports.

RESULTS

The extensive US vital statistics database is summarized in Table 1. The first census report, in 1850, clearly documented that the Irish were at increased risk.²¹ The 1860 census report concerned itself only with the health differences between Blacks and Whites.²² How-

TABLE 1—The Irish Transition in the United States: Summary of US Census-Related Data on Socioeconomic Circumstances and Cardiovascular Disease, 1850–1980

Census Data Year	Observations and Analysis of the Health of Ethnic Irish Groups in the US and Comparisons With Other Immigrant and Nonimmigrant Groups
1850	Irish born constituted 4.81% of the total population in the US but made up 6.23% of deaths from circulatory disease, 7.12% of deaths from respiratory disease, and 6.33% of deaths from tuberculosis. All-cause death rates were 16.41 per 1000 deaths, comparable with the US average (16.16 per 1000 deaths).
1870	Crude death rates from circulatory disease for Irish-born Americans were 85.9 per 100 000 deaths, comparable with rates among Americans born in England and Wales (90.1 per 100 000) but higher than for all foreign-born immigrants to the US (55.7 per 100 000) and for US-born White Americans (41.4 per 100 000).
1880	Health status of Americans of Irish and German extraction is contrasted. Deaths from heart disease and dropsy stood at 62.3 per 1000 deaths among Americans of Irish-born parentage, 60.9 per 1000 deaths among Americans of German-born parentage, 64.5 per 1000 deaths among Black Americans, and 56.1 per 1000 deaths among White Americans generally. Tenement conditions were implicated in high death rates of poor White Americans. Rates of tuberculosis infection were excessive among immigrants to the US of Irish-born parentage.
1890	Heart disease and dropsy death rates were higher overall among foreign-born Americans than among US-born Americans. Irish rates of heart disease and dropsy are the highest of any immigrant group in the United States—Americans with mothers born in Ireland at 15–45 years of age: 96.86 per 100 000 (compared to 66.32 per 100 000 for native-born White Americans); at 45–65 years: 401.94 per 100 000 (compared to 305.68 per 100 000 for native-born White Americans); and at 65 years and older: 1 199.33 per 100 000 (compared to 1129.01 per 100 000 for native-born White Americans).
1900	Irish-born immigrants represented 2.12% of the US population, but Americans of Irish-born parentage number 4 981 047, or 6.53% of the total population. However, this Irish group (both Irish-born and of Irish-born parentage) contributes 10.54% of total deaths from circulatory disease in the US.
1910	Death rates from organic heart disease were 5.63 per 1000 among Americans born in Ireland compared to 0.82 per 1000 of Americans born in Italy. Death rates for other circulatory disease were 1.90 per 1000 for Americans born in Ireland and 0.23 per 1000 in Americans born in Italy. Americans of Irish origin accounted for 10.11% of organic heart disease cases and 11.24% of circulatory disease cases in the US, though immigrants born in Ireland made up only 1.47% of the total US population. Dublin and Baker ³² reviewed in more detail the available data for Pennsylvania and New York, confirming excessive mortality for those of foreign and mixed (one parent not from US) parentage and those who were foreign born—this excessive mortality was especially true for the Irish of all categories, being about double the rate for second-generation Americans. Heart disease for males born in the US aged 45–64 years was 232.5 per 100 000 in Pennsylvania and 316.3 per 100 000 in New York, compared to 529.3 per 100 000 for Irish-born males in Pennsylvania and 580.2 per 100 000 in New York. Rates of heart disease were also much higher among similar groups of Irish women when compared with overall rates for women in Pennsylvania and New York.
1920	Age-adjusted death rates from cerebral hemorrhage per 100 000 population were reported according mother's country of birth—New York City: 99.9 Ireland vs 81.9 US, Pennsylvania: 95.7 Ireland vs 86.1 US, New York State: 85.6 Ireland vs 67.2 US, and Chicago: 82.4 Ireland vs 60.4 US. Americans with mothers born in Ireland had higher rates of cerebral hemorrhage than any other group, including Americans with US-born mothers. The highest rate of heart disease was in New York (389.3 per 100 000) for those with mothers born in Ireland and the lowest, in Pennsylvania, for those with mothers born in Italy. In a detailed monograph, Carpenter ³³ reported the health status of immigrants and their children, including socioeconomic circumstances; he singled out the Irish for special mention as being at particularly excessive risk of poor health.
1930	The total foreign-born population from Ireland was 1 037 234 in the US. National mortality data were not published, but a Boston-based census tract-level study found that the highest rates of infant mortality were in Charlestown and South Boston (neighborhoods in Boston, Mass), ^{33,34} though the Irish were integrated across the city. A strong inverse relationship was also found between 1930s socioeconomic indicators and present-day health status. The correlation between infant mortality rates during the 1930s and the coronary heart disease rate in the 2001 Health of Boston report ³⁵ was 0.564 ($P < .05$), with the highest rates being in Charlestown and South Boston.
1950	Two area-based studies showed excess mortality among those of Irish extraction in the US. Trulson et al. ³⁶ showed that first-generation Irish have higher death rates than US-born Bostonians with US-born parents and Stampler et al. ³⁷ showed considerably excessive risk at 45–64 years for the Irish in America compared with other immigrant groups, US-born Americans, and the Irish in Ireland.
1980	Rosenwaike and Hempstead, ³⁸ analyzing data through the 1980 US census, concluded that the SMR (Standardized Mortality Ratio) for heart disease is 0.95 for those male immigrants to the US born in Ireland compared with US-born males, but with a ratio of 1.16 to the rate for Italian American males and that an excess of cerebrovascular disease existed, with SMR 1.13 in men and 1.56 in women compared with the US-born population.

Note. We refer to several classifications of circulatory diseases (“circulatory disease,” “cerebrovascular disease,” etc.) as they were used in the different historical reports. The terminology regarding race/ethnicity also varies from census to census—respondents may be categorized according to (a) whether they were native born vs foreign born, (b) whether they were of native-born vs foreign-born parentage, or (c) their country of origin. All data were taken from US Census Bureau reports^{21–30} unless otherwise cited.

ever, the subsequent 4 census reports across the latter half of the 19th century continued to indicate excess cardiovascular mortality risk among citizens of Irish extraction.^{23–26} In 1910 and 1920, rates were elevated among various

foreign-born groups, but particularly among the Irish.^{27,28} For instance, in all the urban areas with the highest age-specific death rates for stroke (another condition that may have early-life origins^{39,40}) in 1920, men and

women of Irish parentage were at demonstrably increased risk, whether US-born or not.

From the period of the 1910 census onward, a number of monographs and reports examined the effect of migration on health with

careful, age-standardized approaches.^{32–38,41–44} During this period, the overwhelming majority of immigrants were Whites of European origin. In examining the documents, we found a general consensus among them that immigrants, and indeed their first-generation children, were at excess risk of circulatory diseases compared with US Whites of native parents, and that the Irish were consistently at higher risk than other immigrant groups. This phenomenon of Irish immigrants being at particularly high risk for cardiovascular disease persisted over a period of 150 years.^{36,38–44} The important question is, *why?*

Although early demographers considered the effects of ethnicity and adverse social conditions on longevity and health,^{41,42} newer generations of epidemiologists were more inclined to attribute these effects to a so-called process of Americanization mainly related to individual-level adult lifestyle.^{36–38,44} However, no one adequately explained why the Irish were consistently at higher risk. Was their excess risk related to constitutional or genetic factors, adverse lifestyle practices, processes of material disadvantage, or psychosocial processes operating at the individual or community level? As suggested in the title of this article, one way of restating this question is to paraphrase it in terms of Robert D. Putnam's most influential work, *Bowling Alone: The Collapse and Revival of American Community*, in which he describes—beginning with the example of the rise in popularity of bowling but the decline of bowling leagues—Americans' increasing disconnectedness with each other.⁴⁵ Putnam maintains that this “bowling alone”—a marker of the decline in social capital—is partly responsible for the apparent collapse of community in America and it may have far-reaching health impacts.^{45–47} The Irish immigrants were not bowlers (at least not initially) but they did have their own ancient and unique community team sport called “hurling” in their country of origin, which also serves as a symbol of social capital. So was the high risk of cardiovascular disease in the Irish in the US somehow caused by the fact that they were *hurling alone?*

Community Networks and Health

This brings us to the question of social disadvantage among the Irish and the degree to which its origins are material or psychosocial.

The Boston Health League in the early 1930s¹⁷ investigated the predisposition of certain areas to higher infant mortality with 2 detailed reports that incorporated social and health statistics.^{33,34} There were then 14 census tract areas in Boston (Table 2). For each of these areas, the following data were collected: (1) ethnicity (percentage of all foreign-born, US-born of foreign parents, US-born of native parents, Negro [*sic*], and foreign-born from several countries, notably Ireland, Italy, and Canada), (2) citizenship status (percentage naturalized citizens, aliens, and those with “first papers” [those in the process of naturalization]), (3) health indicators (infant mortality, tuberculosis incidence, and adult mortality), and (4) economic status (unemployment; criminal delinquency; numbers receiving unemployment aid, dependent aid, mother's aid, and old-age assistance; and housing type and median monthly rental [\$]).

A variation in infant mortality was found; the highest proportion of Irish-born was found for the 2 areas with highest mortality, Charlestown and South Boston (Table 2). When the interrelationship between variables is explored using Pearson's correlation method, these data present a convincing pattern of each ethnic group in social transition. The Irish, as the longest-established immigrant group, were distributed across the city and were likely to live in areas with high numbers of US-born people of foreign-born parentage ($r=0.719$, $P=.004$) and high numbers of naturalized citizens ($r=0.716$, $P=.004$) but were unlikely to be living in areas with high numbers of aliens ($r=-0.759$, $P=.002$). The Canadians, by contrast, were more affluent and were most likely to be living in communities with high numbers of US-born people of native-born parentage ($r=0.902$, $P<.0001$) and were highly unlikely to live in communities with high proportions of foreign-born people ($r=-0.950$, $P<.0001$), unemployment ($r=-0.622$, $P=.018$), or criminal delinquency ($r=-0.741$, $P<.560$). The Italians, more recently arrived, were unlikely to live in areas with high numbers of either Irish or Canadians or high numbers of native-born people of native-born parentage ($r=-0.620$, $P<.018$), and they were also more likely to reside in areas with high rates of dependent support, various forms of relief, and juvenile criminal delinquency. Table 3 indicates strong, consistent interrelationships be-

tween health and social indicators, with median rental income inversely associated with infant mortality rate and with incidence and mortality rates of tuberculosis.

In line with the hypothesis of early-life influences on adult health,^{1–4} the question arises as to whether these previous patterns of association between social and health indicators can be related to present-day health profiles. The net effect of social mobility over time and between areas of any large city is complex—so interpretation of such long-term, complex changes must be done cautiously. However, 13 of the 14 original census areas still exist, though subdivisions and changes make them only indirectly comparable. For instance, the West End is now part of Back Bay and the Beacon Hill neighborhood, and Mattapan and Roslindale are now considered separately.

In a special study of these changing community profiles, Gamm used sociodemographic data by census tract (ethnicity continued to be recorded to some degree between 1940 and 1970) to examine patterns of migration of Jewish and Catholic groups in Boston—he complemented this census data with church and synagogue records.⁴⁸ He also took account of major policy initiatives around affordable housing, including the Boston Banks Urban Renewal Group scheme. Gamm found that there was surprisingly little shift in the Catholic populations, largely owing to strong affiliation to religious parishes. Because these populations are predominantly of Irish extraction, we can therefore be somewhat confident of a continuing pattern of people remaining in their areas of birth, particularly among the older generations. Table 2 shows present-day rates of age-standardized coronary heart disease and stroke, which are still reported by neighborhood in Boston.³⁵ Overall, there is a significant correlation between infant mortality rates in 1930–1934 and coronary heart disease rates averaged for 1994–1998 ($r=0.564$, $P=.04$). Present-day rates of coronary heart disease are clearly highest in Charlestown and South Boston (Table 2). Although the relationship between overall infant mortality rate in the 30s and present-day Irish-born percentage is not quite as strong ($r=0.46$, $P=.09$), both coronary heart disease rates for the 1994–1998 ($r=0.608$, $P=.027$) and stroke rates for 1994–1998 ($r=0.591$, $P=.033$) are signifi-

TABLE 2—Characteristics of 14 Census Tract Areas in 1930s Boston (Boston Neighborhood Study^{33,34}) and Corresponding 1990s Stroke and Coronary Heart Disease Rates (Health of Boston 2001³⁵)

	Back Bay	Brighton	Charlestown	Dorchester North	Dorchester South	East Boston	Hyde Park	Jamaica Plain	North End	Roxbury	South Boston	South End	West End	West Roxbury
Boston Neighborhood Study														
Nativity, %														
All Foreign-born	26.00	35.8	44.9	52.9	55.5	68.7	47.10	43.00	87.40	48.00	55.6	50.80	62.5	40.3
US-born to foreign parents	24.00	31.00	34.00	30.00	26.00	22.00	30.00	34.00	10.00	24.00	30.00	16.00	22.00	35.00
US-born to US-born parents	48.00	32.00	20.00	17.00	18.00	9.00	23.00	23.00	3.00	14.00	14.00	17.00	13.00	24.00
Irish-born	13.20	23.80	49.30	21.10	13.70	5.20	13.20	28.20	0.00	22.70	35.20	14.00	0.00	18.90
Italian-born	0.00	0.00	8.40	9.20	0.00	63.70	22.80	0.00	94.80	0.00	10.50	15.80	26.70	11.30
Canadian-born	37.00	26.40	18.80	16.90	12.30	14.00	19.00	20.40	0.70	17.60	10.10	17.70	0.00	19.60
Citizenship status, %														
Naturalized citizen	49.20	61.80	63.00	61.50	60.90	41.00	54.30	66.90	30.90	60.00	49.00	45.20	39.80	65.20
With first papers	13.20	9.60	11.20	9.90	9.20	11.00	10.30	10.10	10.00	10.00	12.80	12.40	13.20	9.00
Aliens	37.60	28.50	25.80	28.60	39.90	48.00	35.40	23.00	59.10	30.00	38.20	42.40	47.00	25.80
Unemployed, %	3.70	4.40	8.30	7.00	6.40	9.90	7.50	5.20	17.70	8.00	9.40	14.10	6.95	5.40
Criminal delinquency, %														
7–16 y	19.40	13.50	31.00	14.00	9.30	34.10	11.70	12.80	30.80	18.40	25.90	27.40	38.40	18.80
17–20 y	70.10	66.20	118.40	77.00	75.40	87.10	73.10	68.80	102.00	94.00	130.00	113.90	129.80	61.40
Public assistance, %														
Unemployment	1.50	2.50	12.10	6.30	3.80	17.20	14.30	5.80	20.40	10.30	13.30	23.40	12.30	4.70
Dependant aid	1.80	2.00	6.30	3.10	1.80	6.00	8.80	2.10	11.20	6.60	5.60	16.70	8.70	1.20
Mothers' aid	0.03	0.28	1.20	0.70	0.50	1.00	0.60	0.50	1.70	0.70	1.00	0.30	1.00	0.30
Old-age assistance	1.30	1.10	2.90	1.60	1.50	1.30	1.50	1.50	0.90	2.40	1.80	5.80	1.70	0.90
Housing type, %														
Own home	10.10	21.30	26.30	28.00	35.00	28.80	46.90	34.20	7.10	17.80	26.90	16.10	12.30	52.70
Rent	89.90	78.70	73.70	72.00	65.00	71.20	53.10	65.80	92.90	82.20	73.10	83.90	87.70	47.30
In lodgings ^a	9.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30	5.90	0.30	0.30	18.30	7.40	0.30
Median monthly income, \$	54.60	52.90	21.70	39.80	42.30	25.50	35.90	40.90	24.10	33.30	24.20	27.60	29.00	46.00
Mortality														
Infant mortality rate ^b	64.50	50.50	85.70	59.60	49.00	66.80	47.50	48.20	62.70	64.40	74.40	73.10	48.80	46.20
Tuberculosis incidence ^c	125.00	104.60	172.00	112.60	87.60	133.80	90.60	101.80	160.10	171.50	168.60	359.40	149.00	113.80
Tuberculosis mortality ^c	34.50	35.90	76.90	43.40	31.60	45.60	33.00	47.70	55.50	73.30	85.40	154.60	52.20	48.50
Health of Boston														
Stroke ^d	12.80	25.10	28.90	29.00	20.20	16.00	19.90	14.10	16.30	28.10	23.30	19.10	...	22.10
Coronary heart disease ^d	79.80	112.50	151.20	136.90	109.70	125.80	108.90	92.30	76.30	149.10	172.80	133.80	...	108.00

Note. The terminology used is that of the historical reports.

^a"In lodging" refers to renting a room within the landlord's home, whereas "renting" indicates separate accommodations.

^bAverage infant mortality rates 1930–1933 per 1000 live births.

^cAverage tuberculosis incidence and mortality rates 1930–34 per 100 000 population.

^dAge-standardized stroke and coronary heart disease rates per 100 000 1994–1998.

cantly related to proportion Irish born in Charlestown and South Boston at the 1930 census. No relationship with present-day rates is seen for Italians, although Italians were more concentrated in fewer census tract areas.

Taken together, these findings indicate that socioeconomic circumstances in early life are likely to have played a role in the etiology of cardiovascular disease regardless of ethnic ori-

gin, in keeping with previous findings.^{1–4} However, a contrast between the health and socioeconomic circumstances of the Irish and Italians indicates some residual factors as well. This detailed social portrait in 1 city corroborates findings at the national level mentioned previously (Table 1)—that some ethnic groups are more at risk of cardiovascular diseases than others. To the extent that the Irish were disad-

vantaged, a relationship between childhood material deprivation and later health outcomes existed. However, this association between being a member of an Irish American community and cardiovascular disease within a single city echoes the pattern of high rates seen in other regions with significant Irish populations.^{7,8} In Ireland itself,⁴⁹ infant mortality rates during the 1930s were only weakly related to

TABLE 3—Pearson Correlations and P Values for Association Between (a) Measures of Socioeconomic Status and Rates of Infant Mortality in 1930–1933 and Tuberculosis Incidence and Tuberculosis Mortality in 1930–1934^{33,34} and (b) Rates of Stroke and Coronary Heart Disease in 1994–1998³⁵: Boston

Measure of Socioeconomic Status	(a) 1930-1934						(b) 1994-1998				
	Infant Mortality	P	Tuberculosis Incidence	P	Tuberculosis Mortality	P	Stroke	P	Coronary Heart Disease	P	
Own home	-.486	.078	-.604*	.022	-.393	.164	.093	.762	-.016	9.57	
Rent home	-.486	.078	-.604*	.022	-.393	.164	.093	.762	-.016	9.57	
In lodgings ^a	.204	.485	.413	.142	.248	.393	-.524	.066	-.375	.206	
Median monthly rent	-.587*	.027	-.692**	.006	-.701**	.005	-.176	.566	-.467	.108	
Unemployed	.552*	.041	.648*	.012	.626*	.017	.044	.887	.352	.239	
Criminal delinquency, 7-16 y	.538*	.047	.758**	.002	.618*	.019	-.104	.734	.231	.448	
Criminal delinquency, 17-20 y	.644*	.013	.736**	.003	.688**	.007	.236	.437	.626*	.022	
Receiving unemployment assistance	.341	.233	.538*	.047	.560*	.037	-.082	.789	.247	.415	
Receiving old-age assistance	.498	.070	.544*	.044	.549*	.042	.393	.184	.756**	.003	
Receiving dependant aid	.295	.306	.557*	.039	.517	.058	.017	.957	.259	.394	
Receiving mothers' aid	.337	.239	.421	.134	.436	.119	.260	.392	.359	.228	

Note. The terminology used is that of the historical reports.

^a"In lodging" refers to renting a room within the landlord's home, whereas "renting" indicates separate accommodations.

*P<0.01; **P<0.001.

present-day adult coronary heart disease rates ($r=0.26$ for men and 0.29 for women). Nevertheless, when infant mortality rates for selected urban and rural areas of Ireland⁵⁰ and countries to which Irish people migrated are ranked, a strong influence of urban deprivation on these patterns is clearly apparent (Table 4). In the 1930s, infant mortality rates were lowest in rural Ireland and highest in urban Dublin, with intermediate rates in the American cities to which the Irish immigrated in large numbers; Boston, as discussed in the section on community networks and health, presents a wide variation. Two processes must be understood before interpreting the relationship between (a) infant mortality rate, ethnicity, and urban deprivation and (b) later-life health: the effect of disadvantage on the health of Irish immigrants and also the possibility that something particular about the Irish as an ethnic group causes them to continue to incur excessive risk even as they become more affluent.

DISCUSSION

Social Capital and the Irish

The recent focus on social capital as a potentially important explanatory pathway between

TABLE 4—Estimates of Infant Mortality per 1000 Live Births, by Area: Boston Neighborhood Study^{33,34} and Irish Free State Vital Statistics Report,⁵⁰ 1930–1933

	Year	Estimated
		Infant Mortality
Irish Free State (urban) ^a	1931	90
Liverpool, England ^a	1930	82
Edinburgh, Scotland ^a	1931	82
Charlestown, Boston ^b	1930-1933	86
Belfast, Northern Ireland ^a	1930	70
All Boston ^b	1930-1933	61
London, England ^a	1930-1933	59
Irish Free State (rural) ^a	1931	56
West Roxbury, Boston ^b	1930-33	46

^aIrish Free State report.

^bBoston Neighbourhood study.

relative disadvantage and ill health is particularly apposite in this situation, because the cardiovascular health experiences of the Irish and the Italians contrasts so sharply during the period of their assimilation into the American way of life. Concepts of trust, reciprocity, net-

works, and social support are all inherent to the social capital paradigm. Putnam has focused on the importance of civic participation for community well-being and cohesion. In *Bowling Alone*, he elaborated on this concept in the context of the US by positing 2 patterns of civic participation: "Machers," who build up and take part in community organizations, and "Schmoozers," who socialize and contribute positively to community networks.⁴² Similarly, Wilkinson has cited both the British nation during World War II and the Roseto, Pennsylvania, community during the height of the coronary heart disease epidemic in the United States as examples of how social cohesion and an egalitarian community structure not only enhanced well-being and cohesion but protected health.⁵¹

The Irish who immigrated to America during the 19th and 20th centuries were extremely materially deprived, and they had a tough, socially equivocal, and politically controversial history. Handlin,¹¹ in a landmark text, described their assimilation over 2 centuries, and, in particular, documented the prejudice they encountered in this country. The Irish were caricatured as feckless, drunken, and fatalistic for a variety of reasons including their adherence to the Roman Catholic religion in a society dominated by nonconformist Protestants. In reality, these immigrants were prepared to work under conditions so appalling that even Black slaves were not permitted to labor under them (being judged by their cynical owners to be too economically valuable to be risked).¹² Large numbers of Irish women found their independence as housemaids and supported families at home in Ireland.^{14,15} What these people particularly wished to avoid was the grinding labor of subsistence farming that they had left behind, and for this, too, they were criticized by demographers for not taking up farming.⁴¹

Many social factors influenced the rate of assimilation of various ethnic groups into the United States. We know, for instance, that patterns of education differed for the Irish, Jews, Italians, and Blacks.⁵² Irish immigrants to the United States were also accused of not valuing education as much as other immigrant groups did, but this accusation stemmed from a singular failure to acknowledge the context of Irish sociopolitical history. In 1981, Sowell bizarrely asserted that the apparent lack of interest in education he observed in Irish immigrants was

a vestige of an ancient Celtic culture that was “hostile to literacy”⁵³ and that Ireland was the only Western country that did not build a university during the Middle Ages. In fact, the historical record clearly shows that the manuscripts of Irish monastic scholars almost certainly saved the remnants of Greco-Roman culture for posterity.⁵⁴ The Irish preserved their cultural identity through religious belief and the Gaelic language. The strongly religious Irish immigrants in early-twentieth-century US cities, therefore, favored denominational schools but were not necessarily as interested in leaving blue-collar work situations and communities as other immigrants were,⁵² in part perhaps because of their strong social and community identity.

Many of the values prominent among Irish people are highly consistent with notions of social support and social capital. The Irish fleeing the famine came from a country in which the first mass movement of modern history, an almost classic example of social capital in practice, originated—the Catholic Emancipation movement of Daniel O’Connell,^{12,14} which helped achieve the right to full social and political participation by Catholics in Ireland in 1829. This emancipation movement exemplifies a phenomenon of cross-class support for centrist, charismatic leaders that still continues today but that also has concealed serious economic inequality. Emancipation itself perpetuated a class distinction among rural tenant farmers by raising the land-value threshold of those entitled to vote.¹⁴ Nor could this mass populism stem the horror of the famine itself, which in very large measure was directly attributable to British economic policy at the time. Contemporary interpretations by Putnam and others^{45–47,51} of the importance of social networks and support in promoting and maintaining health therefore present the case of the Irish as a paradox.

Although initially despised as an ethnic group, the Irish became one of the most highly successful social networking groups in the United States,¹⁵ contributing constructively to the political and cultural life of their adopted country from the period of the American Revolution onward.¹³ In cities such as Boston, Chicago, and New York, the Irish have formed the backbone of local politics and municipal services. They were joiners of societies, particularly ones associated with Catholicism such as the

Knights of Columbus, and, as Gamm pointed out, their parish networks were so strong in many areas that they were more reluctant than other immigrant groups to join the urban exodus of the 1950s and later.⁴⁸ Coogan represents just one of many commentators and social historians to have chronicled these developments, and, as he noted, “in South Boston the Irish look after their own.”¹⁵ It is instructive that John F. Kennedy’s Pulitzer prize-winning book was calculatedly devoted to aspects of heroic citizenship.⁵⁵ However, as is well documented, this community solidarity possessed a dark side. More recently, Ignatiev¹² described numerous examples of how the Irish, in the course of their social ascent, ruthlessly forged an identity separate from African Americans (who were also in extremely adverse social circumstances)—often, Ignatiev asserted, this resulted in racial prejudice and hostility. Also, political influence can be open to corruption on occasion.¹⁵

Nonetheless, the Irish are characterized by strong family and community support, church-going, and extensive civic participation. However, the Irish do not appear to have benefited from these stocks of social capital in health status terms. A present-day analysis of the relationships among deprivation, lifestyle, and voting patterns in Ireland shows the continuing importance of material indicators of deprivation.⁵⁶ The immigrant group with whom the Irish are most often compared in the United States, the Italians, has qualitatively similar families and networks. The Italians do indeed experience much less coronary heart disease,^{37,38,43,44} but the assumption that this is a consequence of community social capital^{47,51} is confounded by a number of other important factors.⁵⁷ For instance, it is quite clear from the historical data we review here that the community of Roseto, Pa—given such focus in the social capital literature as an apparent exception to the epidemic patterns of coronary heart disease at the time—was just one of many predominantly Italian communities with lower risks of heart disease compared to surrounding communities.⁵⁷ Must we therefore look to more traditional risk factors than social capital to explain the differences?

The Ireland–Boston Diet Heart Study

The objective of the prospective Ireland–Boston Diet Heart Study was to recruit siblings

in Ireland and in the Boston area^{18,37} to study diet and lifestyle in relation to cardiovascular disease. Initially, as a report using 1950 US census data on Boston ethnicities described, both Irish-born immigrants to the US and first-generation Irish Americans had much higher rates of cardiovascular disease and all-cause mortality than either US-born Bostonians or their counterparts in Ireland.³⁷ However, in 1985 there was no significant difference in cardiovascular disease events between recruited groups of Irish-born brothers, who either immigrated to Boston or stayed in Ireland, and US-born men of Irish parentage; but, the sample numbers were small.¹⁸ The Ireland-dwelling brothers had higher calorie and carbohydrate intakes than did the US-dwelling brothers, who, nevertheless, were heavier, less physically active, and more likely to be smokers and drinkers. Saturated fat intake was not different between the 2 groups. It seems that secular factors may have confounded the original investigators’ intentions. Recruitment to the study occurred at the peak of the cardiovascular disease epidemic in the United States, but in the interval between recruitment and follow-up, rates had begun to fall dramatically. Conversely, rates began to rise in Ireland, so that by 1985, a crossover had occurred,⁵⁸ and rates of cardiovascular disease in Ireland have continued to be considerably higher among middle-aged people.^{5,6} This crossover was observed in other contemporary cohort studies of Northern European immigrants as well, illustrating the critical importance of accounting for conditions in both country of origin and country of destination.⁵⁹

Lifestyle Influences on Cardiovascular Disease

The National Nutrition Surveillance Centre in Ireland has examined dietary patterns that emerged over the period since the Irish Famine.^{60–63} The contemporary Irish diet now shows major social variation, reflected in both nutrient and food intake, consistent with emerging inequalities in rates of chronic disease.⁶² The estimates of diet composition from a series of studies of dietary intake from 1863 to 1998 are summarized in Table 5. Fat intake rose consistently, in keeping with the upward trend in cardiovascular disease rates, from a strikingly low baseline. Unlike the Italians, the Irish were not consumers of monounsaturated

TABLE 5—Estimates of Dietary Composition Among Irish People Since 1863: National Nutrition Surveillance Centre^{60,61,62}

Year and Source of Data	% Protein	% Fat	% Carbohydrate
1863 UK Dietary Survey	11	9	79
1905 UK survey on consumption and cost of food in workmen's families	11	24	66
1936 Food Consumption Survey	12	29	59
1948 National Nutrition Survey	13	30	57
1961 Irish Statistical Bulletin	17	29	54
1971 Irish Statistical Bulletin	19	34	47
1990 National Nutrition Survey	15	36	47
1998 Survey of Lifestyles, Attitudes and Nutrition National Survey	17	34.5	46.5

Note. Data cited to other organizations within the table was collated in the National Nutrition Surveillance Centre reports.

fats, fruits, and other vegetables. The Irish population thrived on a peculiarly (by European standards) high-carbohydrate diet primarily because of their dependence on the potato (Table 5). It has been documented by Diner,⁶⁴ in an authoritative historical review of the eating patterns of Italian, Irish, and Jewish immigrants to the United States, that the Irish were more likely than other immigrant groups to adopt the prevailing diet and to adopt it more rapidly and completely. Immigrant groups for whom cuisine was culturally central, such as the Italians and the Jews, did eat differently from the Anglo-German mainstream, with its heavy reliance on meat and a relatively high salt and fat intake. Diner singled out isolated communities like Roseto, Pa, that consumed more cardioprotective products such as olive oil. In some instances, the Irish (for whom the memories of the famine were vivid) even established dining clubs at which to eat anything but their traditional fare. Conceivably, they may have been especially unprepared, in genetic terms, for the high-saturated fat diet they encountered and embraced so enthusiastically in the United States. Celiac disease is extraordinarily common in Ireland, and, arguably, gluten intolerance would have persisted in a population with relatively low exposure to grains and cereals, especially if the predisposing human leukocyte antigen phenotype carried other selective advantages.⁶⁵ A major selection effect therefore may have occurred in famine survivors on this high-carbohydrate diet, both before and after the famine in Ireland. These lines of evidence

related to diet are consistent with a particular genetic predisposition to heart disease persisting across generations.

CONCLUSIONS

This study has synthesized information from the historical record and across several past and current epidemiological studies. There is convincing evidence that Irish immigrants to the United States had inordinate risk of cardiovascular disease for at least 2 generations. This risk appears to have been mainly related to material deprivation in both early and later life and aggravated by an adverse diet encountered on arrival to the United States. Additionally, the social deprivation of the Irish had an important psychosocial component, characterized by the often intense hostility, prejudice, and discrimination toward them. Nevertheless, the Irish had the support of strong religious ties, community networks, and families. Contrasting the different cardiovascular health profiles of two immigrant groups—the similar social circumstances (high material deprivation and high social capital) but the different dietary patterns of Irish and Italian Americans—suggests that in the face of powerful behavioral factors, enhanced social capital may be relatively less important to population health than previously proposed. ■

About the Authors

C. Cecily Kelleher and Geraldine Nolan are with the National Nutrition Surveillance Centre, Department of Epidemiology and Public Health Medicine, University College

Dublin, Republic of Ireland. At the time of the study, Joseph Tay was with the Department of Health Promotion, National University of Ireland, Galway. John Lynch and Sam Harper are with the Center for Social Epidemiology and Population Health, University of Michigan, Ann Arbor.

Requests for reprints should be sent to C. Cecily Kelleher, MD, MPH, Department of Epidemiology and Public Health Medicine, Earlsfort Terr, University College Dublin, Dublin 2, Republic of Ireland (e-mail: cecily.kelleher@ucd.ie).

This article was accepted March 18, 2003.

Contributors

C. Kelleher contributed to the collection, analysis, and interpretation of data. J. Lynch contributed to data analysis and interpretation of findings. S. Harper contributed to the collection of US Census archival documents and to their interpretation and analysis. J. Tay contributed to the analysis and interpretation of the Boston-area data. G. Nolan contributed to the interpretation of historical dietary data.

Acknowledgments

C. Kelleher undertook the research for this article while a visiting scholar to the United States, supported by the Fulbright Commission (July–December 2001) at, successively, the National Center for Health Promotion and Disease Prevention, Centers for Disease Control and Prevention; the Department of Epidemiology, Harvard School of Public Health; and the Center for Social Epidemiology and Population Health, Department of Epidemiology, University of Michigan, Ann Arbor. She is grateful for the widespread collegial support received at all 3 institutions. J. Lynch is supported by the Robert Wood Johnson Investigators in Health Policy Research Program.

Human Participant Protection

No protocol approval was needed for this study.

References

- Lynch JW, Davey Smith G. A life course approach to chronic disease epidemiology. *Annu Rev Public Health*. In press.
- Kuh D, Ben-Shlomo Y, eds. *A Life Course Approach to Chronic Disease Epidemiology*. 2nd edition, Oxford, England: Oxford University Press; 2004.
- Kuh D, Hardy R. *A Life-Course Approach to Women's Health*. Oxford, England: Oxford University Press; 2002.
- Robinson R. The foetal origins of adult disease. *BMJ*. 2001;322:375–376.
- Department of Health and Children. *Building Healthier Hearts. The Report of the Cardiovascular Strategy Group*. Dublin, Ireland: Government Publications Office; 1999.
- Department of Health and Children. *Health Statistics Report*. Dublin, Ireland: Government Publications Office; 2000.
- Harding S, Balarajan R. Patterns of mortality in second-generation Irish living in England and Wales: longitudinal study. *BMJ*. 1996;312:1389–1392.
- Harding S, Balarajan R. Mortality of third generation Irish people living in England and Wales: longitudinal study. *BMJ*. 2001;322:466–467.
- Harrison L, Carrhill R, Sutton M. Consumption and harm-drinking patterns of the Irish, the English and the Scots in England. *Alcohol Alcoholism*. 1993;28:715–723.

10. Hout M, Goldstein JR. How 4.5 million Irish immigrants became 40 million Irish-Americans: demographic and subjective aspects of the ethnic composition of white Americans. *Am Sociol Rev.* 1994;59:64–82.
11. Handlin O. *Boston Immigrants (1790–1880): A Study in Acculturation.* Cambridge, Mass: Belknap Press; 1959.
12. Ignatiev N. *How the Irish Became White.* New York, NY: Routledge; 1995.
13. Cahill RE. *The Old Irish of New England.* Peabody, Mass: Chandler-Smith; 1985.
14. Keneally T. *The Great Shame. A Story of the Irish in the Old World and the New.* London, England: Chatto & Windus; 1998.
15. Coogan TP. *Wherever Green Is Worn. The Story of the Irish Diaspora.* London, England: Hutchinson; 2000.
16. Farley R. The new census question about ancestry—what did it tell us? *Demography.* 1991;28:411–429.
17. The Boston Health League. A study of infant mortality in Boston for 1932 by health areas and census tracts. *N Engl J Med.* 1933;209:858–860.
18. Kushi LH, Lew RA, Stare FJ, et al. Diet and 20-year mortality from coronary heart disease. The Ireland-Boston Diet Heart Study. *N Engl J Med.* 1985;312:811–818.
19. Condran GA, Crimmins E. A description and evaluation of mortality data in the federal census: 1850–1900. *Historical Methods.* 1979;12(1):1–23.
20. Gibson CJ, Lennon E. *Historical Census Statistics on the Foreign-Born Population of the United States: 1850–1990.* Washington, DC: US Bureau of the Census; 1999. Population division working paper No. 29.
21. US Census Office. *Mortality Statistics of the Seventh Census of the United States, 1850.* Washington, DC: US Government Printing Office; 1855.
22. US Census Office. *Statistics of the United States (Including Mortality, Property etc.) in 1860: Compiled From the Original Returns and Being the Final Exhibit of the Eighth Census.* Washington, DC: US Government Printing Office; 1866.
23. *Ninth Census—Volume II. The Vital Statistics of the United States, Embracing the Tables of Deaths, Births, Sex and Age, to Which Are Added the Statistics of the Blind, Deaf and Dumb, the Insane and the Idiotic. From the Original Returns of the Ninth Census (June 1, 1870).* Washington, DC: US Dept of the Interior, US Census Office; 1872.
24. *Report on the Mortality and Vital Statistics of the United States as Returned at the Tenth Census (June 1, 1880).* Washington, DC: US Dept of the Interior, US Census Office; 1885.
25. *Report on Vital and Social Statistics in the United States at the Eleventh Census: 1890. Part 1: Analysis and Rate Tables.* Washington, DC: US Dept of the Interior, US Census Office; 1896.
26. Census Reports. Volume 111. *Twelfth Census of the United States, Taken in the Year 1900. Vital Statistics. Part 1: Analysis and Rate Tables.* Washington, DC: US Dept of the Interior. US Census Office; 1902.
27. *Mortality Statistics 1910. Eleventh Annual Report.* Washington, DC: US Dept of Commerce, US Bureau of the Census; 1913.
28. *Mortality Rates 1910–1920: With Population of the Federal Censuses of 1910 and 1920 and Inter-Censal Estimates of Population.* Washington, DC: US Dept of Commerce, US Bureau of the Census; 1923.
29. *Fifteenth Census of the United States: 1930. Population. Volume II. General Report. Statistics by Subjects.* Washington, DC: US Dept of Commerce, US Bureau of the Census; 1933.
30. *Sixteenth Census of the United States: 1940. Population. Nativity and Parentage of the White Population. Country of Origin of the Foreign Stock.* Washington, DC: US Dept of Commerce, US Bureau of the Census; 1943.
31. *1990 Census of Population. Ancestry of the Population in the United States.* Washington, DC: US Dept of Commerce, Economics and Statistics Administration, US Bureau of the Census; 1993.
32. Dublin LI, Baker GW. Mortality of race stocks in Pennsylvania and New York, 1910. *Q Publication of Am Stat Assoc.* 1920;17:13–44.
33. Boston Council of Social Agencies. *Social Statistics by Census Tracts in Boston. A Method of Neighborhood Study.* Boston, Mass: Bureau of Research and Studies; 1933.
34. Boston Council of Social Agencies. *Social Statistics by Census Tracts in Boston.* Vol. 2. Boston, Mass: Bureau of Research and Studies; 1935.
35. Health of Boston 2001. Boston, Mass: Boston Public Health Commission Research and Technology Services; 2001. Also available at <http://www.bphc.org/orhads/hob2001>. Accessed November 2001.
36. Trulson MF, Clancy RE, Jessop WJ, Childers RW, Stare FJ. Comparisons of siblings in Boston and Ireland. *J Am Diet Assoc.* 1964;45:225–229.
37. Stamler J, Kjelsberg M, Hall Y. Epidemiologic studies on cardiovascular–renal diseases, III: analysis of mortality by age–sex–nationality. *J Chron Dis.* 1960;12:464–475.
38. Rosenwaike I, Hempstead K. Differential mortality by ethnicity: foreign-born Irish, Italians and Jews in New York City, 1979–1981. *Soc Sci Med.* 1989;29:885–889.
39. Leon D, Davey Smith G. Infant mortality, stomach cancer, stroke, and coronary heart disease: ecological analysis. *BMJ.* 2000;320:1705–1706.
40. Lawlor DA, Davey Smith G, Leon D, Sterne J, Ebrahim S. Secular trends in mortality by stroke subtype over the twentieth century: resolution of the stroke-coronary heart disease paradox? *Lancet.* 2002;360:1818–1823
41. Carpenter N. *Immigrants and Their Children. A Study Based on Census Statistics Relative to the Foreign Born and the Native White of Foreign or Mixed Parentage.* Washington, DC: US Dept of Commerce, US Bureau of the Census; 1927.
42. Winslow EA, Wang PL. The relation between changes in nationality stock and increasing death rates in adult life. *Am J Hygiene.* 1931;14:79–88.
43. Calabresi M. The relation of country of origin to mortality for various causes in New York State. *Hum Biol.* 1945;17:340–367.
44. Kitagawa EM, Hauser PM. Differential mortality by race and other factors. In: *Differential Mortality in the United States: A Study in Socioeconomic Epidemiology.* Cambridge, Mass: Harvard University Press; 1973:104–107.
45. Putnam RD. *Bowling Alone. The Collapse and Revival of American Community.* New York, NY: Touchstone; 2000.
46. Kawachi I, Kennedy BP. *The Health of Nations. Why Inequality Is Harmful to Your Health.* New York, NY: New Press, 2002
47. Kawachi I, Kennedy B, Wilkinson RG, eds. *The Society and Health Population Reader. Income Inequality and Health.* New York, NY: The New Press; 1999.
48. Gamm G. *Urban Exodus: Why the Jews Left Boston and the Catholics Stayed.* Cambridge, Mass: Harvard University Press; 1999.
49. Pringle DG. Hypothesized foetal and early life influences on adult heart disease mortality: an ecological analysis of data for the Republic of Ireland. *Soc Sci Med.* 1998;46:683–693.
50. Irish Free State. *Annual Report of the Registrar General for the Year 1931.* Dublin, Ireland: Dept of Local Government and Public Health; 1932.
51. Wilkinson RG. *Health and Society: The Afflictions of Inequality.* London, England: Routledge; 1996.
52. Perlmann J. *Ethnic Differences. Schooling and Social Structure Among the Irish, Italians, Jews and Blacks in an American City, 1880–1935.* New York, NY: Cambridge University Press; 1988.
53. Sowell T. *Ethnic America: A History.* New York, NY: Basic Books, 1981.
54. Cahill T. *How the Irish Saved Civilization. The Untold Story of Ireland's Heroic Role From the Fall of Rome to the Rise of Medieval Europe.* New York, NY: Doubleday; 1995.
55. Kennedy JF. *Profiles in Courage.* London, England: Hamish Hamilton; 1964
56. Kelleher CC, Timoney A, Friel S, McKeown D. Indicators of deprivation, voting patterns, and health status at area level in the Republic of Ireland. *J Epidemiol Community Health.* 2002;56:36–45.
57. Lynch JW, Davey Smith G. Rates and states: reflections on the health of nations. *Int J Epidemiol.* 2003;32:663–670.
58. Shelley E, O'Reilly O, Mulcahy R, Graham I. Trends in mortality from cardio-vascular diseases in Ireland. *Ir J Med Sci.* 1991;160:5–9.
59. Feinleib M, Lambert PM, Zeiner-Henriksen T, Rogot E, Hunt BM, Ingster-Moore L. The British-Norwegian migrant study—analysis of parameters of mortality differentials associated with angina. *Biometrics.* 1982;38(suppl):55–74.
60. Newell J, Nolan G, Kelleher C. *Nutrition Surveillance in Ireland 1993.* Galway, Ireland: National Nutrition Surveillance Centre, University College Galway; 1993.
61. Friel S, Nolan N. *Changes in the Food Chain Since the Time of the Great Irish Famine.* Galway, Ireland: National Nutrition Surveillance Centre, University College Galway; 1995.
62. Kelleher C, Friel S, Nolan G, Forbes B. Effect of social variation on the Irish diet. *Proc Nutr Soc.* 2002;61:527–536.
63. Friel S, NicGabhainn S, Kelleher CC. *Main Results of the National Health and Lifestyle Surveys, SLAN and HBSC.* Dublin, Ireland: Centre for Health Promotion Studies and Dept of Health and Children; 1999.
64. Diner HR. *Hungering for America. Italian, Irish and Jewish Foodways in the Age of Migration.* Cambridge, Mass: Harvard University Press; 2001.
65. Cronin CC, Shanahan F. Why is celiac disease so common in Ireland? *Perspect Biol Med.* 2001;44:342–352.