

The influence of poverty, deprivation and social class on health inequality: a review of American and Canadian literature

THOUEZ, JEAN-PIERRE

Department of geography and Institute of Geriatry University of Montreal.

Falta dirección y teléfono.

E-mail: jean.pierre.thouez@umontreal.ca

ABSTRACT

The need to understand inequalities in health cannot be limited to the study of differences in healthcare based upon income. One must consider the other elements of social status. Studying of these elements allow a better understanding of the difficulties in daily living which the poorest must face. In this article we present a comparative analysis of the literature concerning health inequalities in the United States and Canada. In a first part we look at the differences in health based upon income, showing that income differences have a greater impact on health in the United States than in Canada. In a second part we complete the analysis by discussing four other elements of social status. These allow us to understand how social inequalities in health develop in a territory. In a third part we briefly describe the health systems of the two countries with emphases on programs to care for disadvantaged people. We conclude that the relations between social position and health and the political implication thereof, should be analyzed in a broader sense that just reform of the healthcare system.

Keywords: inequalities in health population, income, education, occupation, environment, behavior, mortality, health care accessibility, United States and Canada.

La Influencia De La Pobreza, De La Privación Y De La Clase Social En La Desigualdad De La Salud: Una Revisión De La Literatura Americana Y Canadiense

RESUMEN

La necesidad de entender las desigualdades en la salud no se puede limitar al estudio de diferencias en el cuidado de la salud en función del ingreso. Se deben considerar otros elementos del status social. En este artículo presentamos un análisis comparativo de la literatura referente a desigualdades en la salud en los Estados Unidos y Canadá. En una primera parte, se consideran las diferencias en la salud basadas en el ingreso, demostrando que las diferencias de la renta tienen un mayor impacto en salud en los Estados Unidos que en Canadá. En una segunda parte, se completa el análisis discutiendo otros cuatro elementos de status social, los cuales nos permiten entender cómo las desigualdades sociales en la salud se desarrollan geográficamente. En un tercer apartado, se describe el sistema de salud de los dos países con énfasis en los programas de cuidados para personas discapacitadas. En conclusión, las relaciones entre status social y salud e implicaciones políticas deberían ser analizadas en un sentido amplio que lleve a una reforma igualitaria del sistema de salud.

Palabras clave: desigualdades de la población en la salud, ingreso, educación, ocupación, entorno, comportamiento, mortalidad, accesibilidad al cuidado médico, Estados Unidos y Canadá.

JEL classification: I1.

Artículo recibido en Septiembre de 2005 y aceptado para su publicación en Mayo de 2006.

Artículo disponible en versión electrónica en la página www.revista-eea.net, ref.: e-24304.

1. INTRODUCTION

Until recently medical geography has served to describe those geographers invested in the spatial implications of topics relating to human diseases and health and to health care availability as well (Thouez, 2005). Geographical studies of health inequalities have also produced a wealth of evidence concerning the nature and magnitude of such inequalities, at a variety of spatial scales (Gatrell et al., 2000). However, there has been relatively recent work examining and understanding the underlying factors that create them. It is only recently that social, economic and cultural theory has become an important consideration to understand the interactions between socio-economic status (SES) and race and to explore the link between health inequalities and socio-economic inequality. Geographers have sought explicitly to connect conventional concerns of medical geography or the geography of health with more theoretically reflective views of “society and place” and “in-place experience”. Whereas this latter approach emphasizes the agency of people in creating their own meanings and experiences; the former perspective (more influenced by the political economy) recognizes the power of institutional and economic structures (Kearns et al., 1998).

The question of inequalities in the area of health and health care presents a new dimension, at once more ideological and economic with the diffusion of democratic values and the criticism of the excesses of the free market forces. For example, Coburn (2004) presents the relationship between income inequality and health as a special case within a broader causal chain. It is likely that global and national socio-political-economic trends have increased the power of business classes and lowered that of working-classes. The neoliberal policies accompanying these trends led to increased income inequality but also poverty and unequal access to many other health-relevant resources. Thus, neo-liberalism is associated with greater poverty and income inequalities, and greater health inequalities within Nations. Countries with social democratic reforms of welfare regimes (such as Canada) have better health than do those that are more neo-liberal (ex, United States).

The recognition of a double assumption has led the State to reinvest and to rethink its role regarding the politics of public health. The first assumption relates on the one hand, to the goal of attain social justice a need to ensure spatial justice. Together, these two concepts are two dimensions of the notion of “equity”. The second assumption is based upon the inequalities in health throughout the world and their relationship with the level of economic development. This comment is equally valid within a Nation. This vision of public health is more or less depending upon the dominant ideologies, the administrative systems, and the political organization of the territories. But, this vision also reflects the realities of the inequalities in the field.

This paper reviews the evidence between socio-economic inequalities and health. We focus on the magnitude of the differences and on the major explanatory factors involved to account of these variations. We expound upon the evidence of

the separation of Americans and Canadians into winners and losers, according how much they earn, where they lived and how they behave. With this brightened sense of separation goes a more rigid and stratified society. This paper closes by offering short and long-term policy suggestions for the reduction of health problems resulting from poverty, defavorisation and social exclusion.

2. INEQUALITIES IN HEALTH BY SOCIO-ECONOMIC STATUS

In the early 1940's, the United Nations adopted the Universal declaration of human rights, article 25 of which reads "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family". Then in 1960, this international organization adopted a Covenant that specified in more detail the rights to health (articles 10(2), 10(3), 12) (Susser, 1993). Since then, academics and others have tried to go beyond the simple declaration of intention to protect rights and to consider that the struggle against inequalities should be an objective of health care systems in developed countries as well as for international organizations.

Poor social and economic circumstances affect health throughout life. Poverty reappeared in political agendas as a major social issue in the beginning of the 1980's. Landmark reports on racial and ethnic disparities in medical care first emerged during this period (i.e. USDHEW, 1985). The ideological confrontation was expressed through two visions of poverty which both stressed income as the sole indicator of poverty. The first vision holds that poverty is an individual phenomenon, which will disappear with economic growth. The second vision suggests that relative poverty is a question of inequalities, of less rather than not enough.

According to Couffinhall et al. (2004) the measurement of inequality is a complicated exercise and of highly normative content. Following them we must select a method of measurement, which reflects the preferences of those who fix the objectives. Quite simply the measure of an inequality and the choice of a geographical scale are not neutral because they determine the interpretation of disparities. Yet, the precise link between data bases, variables, methodology and results of the studies between income and mortality are presented in table 1.

Singh et al. (2002) developed a SES index by area to examine patterns for all cancer mortality among U.S. men between 1950 and 1998. The index was constructed by applying factor analysis to 11 census variables. The index was then used to stratify all U.S. counties in one of five SES categories. The index was linked to county mortality data from 1950 to 1998 in order to generate annual mortality rates for each SES group. Joint point regression analysis was used to estimate SES gradient in mortality over time. Results show dramatic changes in SES pattern for U.S. male cancer mortality during the past five decades. The higher mortality rates for higher SES areas diminished consistently throughout this period of time, largely as a result of a faster increase in mortality among men in low SES areas. Furthermore,

high SES areas began to experience a levelling off or a decline in mortality at least a decade earlier than did low SES areas. Because of this dynamic, the SES gradient reversed in the late 1980's, indicating higher cancer mortality for lower SES areas than for higher SES areas. In the 1990's, SES differences continued to widen as high SES areas experienced relatively larger cancer mortality declines than did low SES areas. Similar patterns in all-cancer mortality have been observed in Canada (Faggiano et al., 1997). Inverse SES gradients in U.S. cancer mortality were steeper for younger men than for older men, especially in the 1990's. Social inequalities in cancer mortality generally diminish with age, a pattern that has been observed for all causes of mortality (see below, Ross et al., 2002), and for mortality from several cause of death.

Table 1 : Data basis, variables, methodology and results of the different studies between SEE – income – and health – mortality –

References	Objectif	Health Indicators	Inequality measure	Data source	Methods	Results
Barnett et al. (U S A , 1999)	Trends in CHD mortality for different social classes	CHD Mortality	Comparison of 4 social classes	Census Micro-data files for North Carolina North Carolina vital statistics computer files	Average annual percent change in mortality rates from 1984 to 1993 using a regression analysis	In blacks mortality rates decrease for the highest social group, but increase for the others In White: rates decrease for all groups but with greater magnitude in the higher social class. Black adults have a higher risk of death. Socio-economic factors account for one third of the excess risk of death among Blacks
Marcella & Miller(USA, 2001)	Racial and socioeconomic differences in mortality from colorectal cancer	Differences in 5-year survival	Racial and socio-economic groups	1990 U.S. Census Pennsylvania State Tumor Registry	Cox proportional hazard model	The RH index was positively correlated with total mortality, infant mortality, CHD, cancer and homicide. Gini coefficient showed little association with any of the causes of death In the 1990's SES differences between high and low SES areas continue to widen and high SES areas experienced larger cancer mortality declines that did low SES areas Within USA income inequality was significantly associated with mortality but in Canada was not significant
Kennedy and al.(USA, 1996)	Effect of income inequality on mortality	All cause and cause specific mortality	Robin Hood index and Gini coefficient	1990 U.S. Census NCHS & CDC	OLS regression	
Singh et al. (U S A , 2002)	Association between SES by country and mortality	Cancer mortality by race	Pattern in space and time of the association between SES and cancer mortality	Census data and National Health data	Joint regression analysis	
Ross et al. (Canada, 2000)	Compare mortality and income in Canada and the USA at different geographical scales	Standardized rate of mortality	Comparison of groups based on age, income and metropolitan areas	Census data and National health data	OLS regression	

Although, the focus of Singh's study is on men, temporal trends in all cancer mortality among U.S. women shown that older women and women aged 25-64 in higher SES areas had higher cancer mortality than did those in lower SES areas from the 1950's to the middle of the 1980's. However, by the 1990's, the SES gradient has reversed. In 1998, younger women in the lowest SES group had 13 % higher cancer mortality than did those in the highest SES group, a finding consistent with that for Canada (Faggiano et al., 1997).

Kennedy and al. (1996) found that the Gini coefficient derived from the Lorenz curve and the Robin Hood index (also known as the Pietra ratio is equivalent to the maximum vertical distance between the Lorenz curve and the line of equal incomes) were positively correlated with total mortality adjusted for age in the United States. This association remained after adjustment for poverty (which was defined as an annual household income of less than 13 359 dollars for a family of four in 1990). The association of income inequality may be partly mediated by lack of access to medical care. They tested this hypothesis indirectly by examining the relations of income inequality to causes of death amenable to medical intervention. Several of the associations with cause specific mortality – in particular, coronary heart disease and homicide – remained significant after adjustment for these variables.

Ross et al. (2000) compared the relation between mortality and income in Canada with the same relation in the United States. Inequality was operationalised as 50 % of households least well off within an area. The measures of income inequality were examined in relation to all causes of mortality, grouped by and adjusted for age between the 10 Canadian provinces, the 50 U.S. States and 53 Canadian and 282 U.S. metropolitan areas. Their analysis showed that Canadian provinces and metropolitan areas had both lower income inequality and lower mortality than the U.S. counterpart. In age-grouped regression models that combined Canadian and U.S. metropolitan areas, income inequality was a significant explanation variable for all age groupings except for elderly people. The effect was largest for working age populations, in which a hypothetical 1 % increase of the share of income to the poorer half of households would reduce mortality by 21 deaths per 100 000 persons. Within Canada, however, income inequality was not significantly associated with mortality. These results underscore the point that observations of contexts in which income inequality has health consequences and those in which it does not provide opportunities to examine the role of variations in income and social policy which structure the availability of resources and demands placed on population thereby creating different patterns of health and disease in different places.

A robust inverse association between SES (Singh et al., 2002) or income (Ross et al., 2000) and cancer mortality (Singh et al., 2002) or mortality (Ross et al., 2000) exists in the United States but was less evident in Canada” The association between SES and health could reflect selection or “drift” processes where poor health is the cause of low SES. The competing social causation hypothesis views the elevated

rates of illness or mortality among low SES populations as a consequence of their low socio-economic circumstances. The direction of influence can not be assessed in the typical study, but a growing number of cohort studies suggest that although health-driven downward social mobility occurs, it makes only a minor contribution to SES differences in health (Williams, Collins, 1995). However, the association between SES and health has been widening in recent decades in the United States and in other countries including Canada. For the quarter-century after the Second World War, income growth in the U.S was fairly evenly spread. According to a study by the Economic Policy Institute (EPI), in the past quarter-century, the rich have been doing dramatically better than the less well off. In 1970, the bottom fifth received 5.4 % of America's total national income but that of the top fifth had risen to 46.5 %. Singh et al. (2002) found that disparity reflects more rapid gains in the health status for high SES than for low SES groups, but for some health indicators, evidence suggests a worsening health status at the low end of the socio-economic spectrum. Premature mortality of African-Americans exceeds that of whites for the principal causes of mortality: it is two times higher for homicides and HIV-AIDS, but equally for strokes (Barnett et al., 1999), for certain cancers (Marcella and Miller, 2001), for diabetes and other diseases. In terms of health, however, differences of premature death, illness and disability are closely tied to socio-economic factors. Similarly, for several economic indicators there has been an absolute decline in the economic status of African-Americans. As part of the increasing income inequality in the United States, the gains in economic status of blacks relative to what of whites have stagnated in recent years (Williams, Collins, 1995).

2. THE ROLE OF CONTEXTS

The studies undertaken during the last decade have shown that certain factors inherent in the context can influence individual and populational health. Do disease, death and health vary according to place? What are the relationships with the environment? (Picheral, 1999).

Sampson et al. (1997) identified over 40 relevant studies published in peer-reviewed journals from the mid-1990's to 2001, the take-off points for an increasing level of interest in neighbourhood effects. Moving beyond the traditional fixation on concentration of poverty, they evaluated how neighbourhood social processes bear on the well being of children and adolescents. These social processes or mechanisms provide accounts of how neighbourhoods bring about a change in a given social phenomenon of interest. Their study concerning Chicago demonstrates the effects of a "collective efficiency" or a "global capacity" of the residents to intervene and solve common problems. Sampson et al. (1997) highlight neighbourhood ties, social contact, mutual trust and routine-activity patterns as being significant. However there is little doubt that extra-local neighbourhood mechanisms appear with considerable

strength suggesting that spatial externalities operate above and beyond internal neighbourhood characteristics. Subramanian et al. (2002) examined the socio-economic and demographic attributes that systematically correlate with individual perception of “social capital” (quantity and quality of social relationships as well as norms of reciprocity and trust that exist in a place or a community). They found that African-American, people who are separated or divorced, people of lower socio-economic status as well younger persons were more likely to report mistrust. In addition, their finding suggests that though there is a clear patterning of trust, perceptions along demographic and socio-economic lines, there remain significant variations between neighbourhoods in Chicago. Their results reinforce the construct of social capital as a contextual variable.

Area socio-economic indexes, when used in the construct of ecologic surveillance, could be particularly useful for identifying the potential impact of cancer control interventions, health service needs, and resource allocation for socio-economically disadvantaged areas, as well as, for generating specific research hypotheses that may require multidimensional social data for individuals (Singh et al., 2002).

With respect to the effect of the socio-economic environment related to residence, studies have shown that the poverty of the context influences many variables of health. More especially, the risks of low birth weight are higher in poor areas (O’Campo et al., 1997; one is more likely to suffer from chronic diseases (Malmstrom et al., 2001); people are more likely to report ill health (Blakeley et al., 2002); and likewise to diet (Yen, Kaplan, 1999).

Concerns have also been raised about the extend to which low SES persons in general and racial minorities in particular are disproportionately exposed to environmental risks in residential environments. A study by the United Church of Christ (Commission for racial Justice, 1987) found that race was the strongest predictor of the location of hazardous wastes sites in the United States. Underlying this claim of environmental discrimination is the belief that pollution may play an important, yet poorly understood, role in the complex pattern of disparate health status among the poor and racial minorities in the United States. Thus, the politics of community interact with larger structural forces, finance, property capital and power to impact patterns of residential and industrial developments (Morello-Frosch, 2002).

3. UNDERSTANDING HOW SOCIO-ECONOMIC STATUS INFLUENCE HUMAN HEALTH

SES is widely use as a proxy for social class in studies that examine variations in the distribution of health, diseases, access to health care and health care demand. Income, education and occupation are the most common variables used to measure SES. In the first part of this paper we have reviewed several studies which associate health to income. Isaacs and Schroeder (2004) have asserted that in the United

States, the wide difference in health between the have and the have-nots are largely ignored. The hypotheses that income inequality is detrimental to population health as been debated in the literature (Lynch et al., 2003; Subramanian, Kawachi, 2003). However, the income measure suffers from several limitations.

Analyses using income are more likely than those of some other SES indicators to be open to reverse causation arguments. That is poor health can lead to decline in income... In addition, income information may be essentially sensitive for some, resulting in higher non response for income questions than for other SES indicators... Income is also a more unstable measure of SES than is either education or occupation... Rather than using the instability of income as a reason not to collect income information, the dynamic nature of income highlights the importance and potential contribution of indicators of long term economic well-being. Longitudinal studies have documented that measures of average income capturing long-term exposure to economic deprivation are more strongly related to childhood health outcomes than are single-year indicators of economic status... More health studies should include indicators of [family] assets or wealth. The extent to which traditional measures of economic consumption such as the monthly cost of housing and food are predictors of health status is another important but neglected issue

(Williams, Collins, 1995, p. 354-355).

The second indicator to measure SES is education. In the United States, people without a high school diploma as compared with college graduates are three times as likely to smoke (National Center for Health, 2002) and are likely not to engage in leisure time physical exercise (Pratt et al., 1999). Estimates of participation in regular physical exercise were derived from three national surveys for adults and from the Youth Behavior survey for high school students. Participation in vigorous activity was higher in whites (66.8 %) compared with blacks (53.9 %). Whites are more active than blacks, and persons with higher family income and more education report being more physically active. There are been only minor changes in reported participation in leisure time physical activity over the past 15 years (Pratt et al., 1999). Drug use is closely linked with the spread of HIV-AIDS it involves men, women and children in disadvantages areas and finds a privileged place among drug users. Muller (2002) tested whether the relationship between income inequality and mortality in the United States is a consequence of different levels of formal education. The conducted state-by-state analyses of age-adjusted mortality from all causes and three independent variables: the Gini coefficient of income in 1989 and 1990, per-capita income from those years and the percentage of people older than 18 who did not complete high school. An income inequality effect was found, but it disappeared when the percen-

tage of people without a high school diploma was added to the regression analysis. The author conducted that the lack of a high school diploma accounts for the income inequality effect and is a powerful predictor of mortality variation across states.

However, the education measure suffers from several limitations.

First, in at least some national data, inequalities in health associated with income are larger than those associated with education... Second, the lack of volatility in education levels for most adults precludes assessing how health status is affected by changes in SES. Third, many studies that use education as an indicator of SES are individualistic in approach and do not incorporate information about the education level of other members of the household. Fourth, the return for a given level of education varies importantly by race and gender

(Williams, Collins, 1995, p. 354).

Greater attention of the age patterning of the association between education and mortality has been addressed in the literature. Analyses of the National Longitudinal Mortality Study (NLMS) data found that although the association between education and mortality exists for persons aged 65 or older, it was not as strong as at the younger ages (Rogot et al., 1992).

The third indicator to measure SES is occupation. Occupation is related to social position (Eberstadt, Satel, 2004). Social position theorists draw upon the solid experimental literature about time-limited stress as a mediator of physiological responses (immune, cardiovascular, immune system) to environmental changes (Eberstadt, Satel, 2004). Mare (1990) studied the association of father's occupation, first occupation, and current occupation to mortality in the National Longitudinal Survey of the Labor Market Experience of Mature Men (NLS). Father's occupation was inversely related to mortality, but the effects of first occupation on mortality were stronger than those of father's occupation, and they appeared to be due to the ability of sons from higher SES origin to acquire more schooling. Moore and Hayeward (1990) used also data from the NLS and found that the aspects of the occupational environment that accounted for the association between occupation and mortality varied with the occupational indicator utilized. For longest occupation, the substantive complexity of the job (routinization and autonomy) is the major factor, while social skills and physical, environmental demands are the major factors accounting for the effects of the most recent occupation. Lower status jobs can expose workers to an unhealthy environment and being repetitive tasks. Workers in these jobs have little security or control over their work, which, in term, leads to increased stress levels and to a greater chance of illness (Blanc, 1995; Isaacs and Schroeder, 2004). The characteristics of the unemployed vary from place to place but unemployment tends to be concentrated in certain groups and certain places. Unemployment is essentially a spatial process,

because people are limited in how far they can travel to work in a day. They rely on the supply of work in their local area and when this disappears unemployment rises (Shaw et al., 1999). The growth of unemployment rate and insecure employment as well as the fact of increasing numbers of disabled welfare recipients and homeless are referred to the “new poverty”. This is in addition to, and not replacing others forms of poverty among the elderly, the sick and the children. Few programs have offered job support-services to disabled welfare recipients and to help workplaces respond to the needs of disabled workers. More imaginative and effective solutions should mix work and training, a step easier to get and keep a job. Although there is much to learn about the health of migrants and refugees. Even within particular occupational groups there is evidence that these people experience worse conditions and hence demonstrate unfavourable health outcomes, compared to the indigenous populations (Eggar et al., 1990). The association between multiple measures of occupation and mortality can be complex (Williams, Collins, 1995).

A practical barrier to the use of occupation for analyses of [national] mortality data is that the numerator and denominator do not use the same units of measurement. Denominator data comes from the census, which collects information about current occupation. Numerator data comes from death certificates, which collect information about usual occupation

(Williams, Collins, 1995, p. 356).

This problem has been found in the United States and Canada. There is a growing awareness to other emerging issues. The first one is now emerging in Great Britain, where good longitudinal data on class are available that health outcomes in adulthood reflects the accumulating influence of poor socio-economic circumstances (Shaw et al., 1998). Thus an adult’s health status is a function not only of the current SES but also of the SES conditions experienced over the life course (Elo, Preston, 1992). However, in the literature this argument deals mostly with the health of children. “It appears that some diseases acquired in childhood, such as tuberculosis and typhoid, can be harboured for decades and manifest themselves later in life. Infection plays a major role in growth retardation, and malnutrition as reflected in height may adversely affect the immune system” (Williams, Collins, 1995, p. 376). Adverse socio-economic conditions in early-life can produce lasting increases in the risk of cardiovascular disease, respiratory disease and some cancer in later life (Davey Smith et al., 1998).

The second type of issue concerns the health of women. They are over represented among the poor, but the nature of the association between SES and women’s health is not well understood. “The assignment of women to the occupational status of male relatives is increasingly problematic given the growing number of women

who are employed outside of the home and the increasing number of female-headed households” (Williams, Collins, 1995, p. 358). Borrell et al. (2006) compared the relationship between nativity and breast cancer risk factors among US-born blacks and foreign-born blacks from a sample of black women over 18 years of age in Brooklyn, New-York. The former group was twice as likely to have never breastfed. Furthermore, among those who breastfed, they breastfed for shorter duration. Because lactation reduces breast cancer risk and is a leading modifiable risk factor, understanding its variation within black women will help physician to target patient counselling.

In the United States in particular, poor women have children younger, out-of-wedlock and without a job. True out-of-wedlock births are falling and welfare protects children from poverty, but the gap is still vast between social classes. The Welfare Reform Act of 1996 delegated more power to the states by handing over a fixed annual grant and allowing them to spend the money as they wished. However, at the end of September 2005 the state’s federal welfare expires and the federal government has not yet reauthorized welfare reforms, so there is no clear course forward. In this notion a comprehensive review of the available evidence led Williams and Collins (1995) to conclude, “Socio-economic differences between racial groups are largely responsible for the observed patterns of racial disparities in health status”. A conclusion shared by Davey Smith et al. (1998).

Some researchers suggest a third argument that living conditions are the critical variables. Living in a crowded house hold can increase one’s risk of streptococcal infection and acute rheumatic fever, which in turn become major risk factors of rheumatic heart disease later in life (Williams, Collins, 1995). The ingestion of lead has been found to be associated with neurological problems particularly in poor children (Bellenger et al., 1993). Poverty imposes constraints on the material conditions of every day life by limiting access to adequate housing and good nutrition. Poor housing can be damp, cold and contain mold, conditions which are associated with infection, respiratory illness, asthma and excess winter mortality (Clinch, Healy, 2000; Samet, 2003). Poor housing conditions can also being a risk of fire and accidents, and overcrowding housing not only increases the risk of infection but impacts upon mental health through factors such as high noise levels, lack of privacy and domestic violence (Hornor, 2005). Certain research is more controversial because of debates about measurement issues or because of methodological criticisms of the evaluation and assessment of environmental inequities between health and when people live. Cutter and Solecki (1996) have examined whether lower income minority countries in the South Eastern United States are disproportionately at risk from airborne releases of extremely hazardous substances. They have found a partial evidence of environmental inequities but they note in their conclusion “we need to learn much more about the social construction of hazardous places. How do environmental inequities develop, how are they perpetuated, and how can they be eliminated?”.

Finally, the links between health and housing have a cumulative effect within broader socio-economic contexts. Dunn and Hayes (1998) have asserted in two Vancouver neighbourhoods that the multiplicity and overlapping of differential distributed stressors have the capacity to shape health and well being systematically across the social hierarchy. Consequently, poor neighbourhoods with substandard housing, high crime rates, few or not decent medical services nearby, low quality schools, few recreation facilities and almost no stores selling wholesome food, offer to the residents no matter thus race or income, little chance to improve thus lives and engage in health promotion behaviours.

The United States is separating by types of places; the aleas of the housing market accentuates the spatial design of poverty. There results social exclusion, which creates its own version of social problems and notably the denial of fundamental rights including the right to health care. Spatial concentration and segregation can mean that places can become more deprived, disadvantaged or stigmatized. This may affect all of those in the area, and affect their potential for mobility (Shaw et al., 1998).

A fourth issue is medical care. "Inadequate use of medical care, especially preventive medical care, by the poor and members of racial/ethnic minority populations is generally viewed as an important determinant of their health status " (Williams, Collins, 1995, p. 372). There are racial and socio-economic status differences in the quantity and quality of medical care. A study of deaths of blacks and whites in Alameda County, California found that deaths due to causes amenable to medical intervention accounted for about one third of the excess total death rate of blacks relative to whites (Woolhandler et al., 1985). Marcella and Miller (2001) found that higher stage-specific mortality rates and more advanced stage at diagnostic both contribute to the higher case –fatality rates from colorectal cancer among blacks adults, only some of which is due to socio-economic differences. Barnett et al., 1999) have provided a comprehensive study of the evidence between coronary heart disease (CHD) mortality trends by social class in North Carolina from 1984 to 1993. For black men aged 35-54, CHD mortality increased by 18 % in social class II (secondary white collar), by 2 % in social class III (primary blue collar) and by 6 % in social class IV (secondary blue collar) over the 10 year period. In contrast CHD mortality decreased by 33 % for black men in social class I – the highest class – (primary white collar). The higher mortality rate among poor and members of racial/ethnic minority populations may result from later initial diagnosis of disease, comorbidity, delays in treatment, or others gaps in the quality of care (Kerby et al., 2005).

Finally a fith issue concerns the role of individual behavior and life styles. Social disparities in tobacco use, diet, exposure to environmental pollutants and use of medical care may partially account for the differences at the individual level. However, social characteristics do provide a context for many of the behavioural risk factors (National Center for Health, 2002). The federal report or black and minority health also identified health behaviors as the major determinant of the excess level of mor-

tality in minority populations in the United States (US Department of Health and Human Services, 1985).

Whatever the most important elements of class may be there must to mechanisms whereby being in a lower social class translates in poor health. In this well known 1989 book "Post-modern Geographies: the reassertion of space in critical social theory", E. Soja introduced the disarmingly simple but penetrating observation that "space hides consequences from us"; the health consequences (and causes) that space may hide from us in the urban environment. Other research suggests that stress is one such mechanism (Isaacs and Schroeder, 2004). Physiologically, stress appears to trigger a neuro-endocrinologic response that is beneficial in the short term but over the long run can weaken the body's resistance to illness (Mc Ewen and Seaman, 1999).

Despite the compelling theoretical arguments, there is little evidence that health reforms alone will have the effect of reducing inequality in the society and thus an effect on health.

4. ADVANCING SOCIAL AND ECONOMIC POLICIES THAT WILL IMPROVE HEALTH

The proliferation of studies of SES and health needs to placed within an appropriate framework to enhance our understanding of the underlying dynamics. We will start this section by describing briefly the principles underlying health care organizations in Canada and the U.S: while emphasizing the programs targeting disadvantage people.

According to the 1984 Canada Health Act (CHA) all provinces and territories in Canada must abide by five principles in order to receive federal funds: universality, comprehensiveness, portability, public administration and accessibility. The federal government establishes the guidelines and the provinces and territories organize and disseminate the health care. Beveridge's principles inspired this health system. The health expenses in Canada wide are about 10 % of GDP and more in Ontario and more in Ontario and Quebec. In fact, inspite of a complex system of compensation for inequalities among the provinces, those have difficulties containing health care costs. For about twenty years we note a diminution in the federal support for health expenses. On the other hand, individual expenses have increased considerably and represent 30 % of the expenses for health (a percentage is in nevertheless two times less than that of the U.S). On the other hand, the expenses for social protection are much higher than in the U.S (Lambert, 2000). Although often praised, the Canadian medical system is not the most successful either in terms of organization, efficacy or equity. Using data of the 1998 Canadian health care systems, Wilson and Rosenberg (2002) show that approximately 6 % of Canadian report access problem but there are large regional variations in both access to health care and barriers to receiving care.

In Quebec, for example, the government's policy in the 1990's led to a reduction of the number of hospital beds, a tighter control over the acts of doctors especially specialists, and the support for early retirement by doctors and nurses. The objective of the reform was to direct patients to local health care centers and to primary care physicians rather than to hospitals. Because of the lack of funding this strategy failed leading to overloading of hospitals, long lines of patients in the emergency rooms (emergency department doctors often take care of the most seriously ill or injured (patients first which may back up other patients), and delays in surgeries. Nevertheless, the principle health objective of the Quebec system is the care of the disadvantaged (free drugs, health care for children...). However the aging of the population and the increase in disadvantaged people present a large challenge for the provincial government in a difficult economic context (Thouez, 2001).

Unlike Canada, the U.S rejected the principle of an obligatory and a universal health care (failure of the Clinton 1994 plan, for example) in favor of an approach entitled to insurance. Thus a third direction between Beveridge's and Bismarck's logic (Lambert, 2000). The American approach certainly one which can be improved upon, opens new proposals in the health between social welfare for the poor (Medicaid) and social assistance for the elderly (Medicare). These two federally subsidized programs account for 40 % of public spending (additional federally subsidized programs account for about 6 %). Together these programs reach between 40-50 million beneficiaries, some of which are covered by two or three of these programs. In parallel, there is a private and voluntary insurance system, generally a group insurance, the group being defined by a common employer. There are also individual contracts for 20 % of Americans. Because there are no reliable profiles of people who have no health insurance, it is difficult to know their health status. In 1998, according to date of the OCDE: 15-20 % of Americans (that is between 43-54 million) have no health insurance. The majority are employed but a quarter of this group works part-time, 32 % are Hispanic; 8.5 % African-Americans; 31.6 % are foreign-born; 41.3 % are no U.S citizens; 27.3 % are between 18 and 24 years; 26.6 % do not have a high school diploma (Lambert, 2000). It is likewise important to note that a large number of independent workers are not insured because the premiums are too high. Finally, the rise in non-insured persons is due to the increase of jobs which are in the service sector and the refusal of certain employers to cover the premium, the co-payments, and deductibles in health policies. What distinguishes the U.S from Canada is the absence of an insurance monopoly in the area of health care.

The financing of Medicaid is shared between the federal government and the States according to their revenues. Thus the federal contribution varies between 50 and 80 %. Medicaid applies to the poor and to children but the level of poverty is defined by each State and varies abnormally. The poverty line, however, determines also eligibility for different forms of aid (food stamps, family allowances...). If, after the applicable aid has been given, the revenue of the recipient is higher than the poverty

level, the recipient can lose the benefits of Medicaid. The States manage the program and pass contracts with managed care organizations fixing ailing of payments. As the States grapple with the scaring costs of Medicaid, they are eying co-payments-patient's contributions to the cost of healthcare. The contribution of Medicaid to the care of the poor is important. Medicaid enrollers often are in poorer health and have much lower incomes, so low that even nominal increases become extraordinary barriers. In view of the increasing costs of health care, the federal government as began to study proposals to reform Medicaid and Medicare. However, as with previous work, Kerby et al. (2006) found that insurance status while important, explains only a fraction of racial and ethnic disparities in access.

The U.S is a federation and in fact there exist 50 different health systems. States as Massachusetts, California, Oregon have attempted to put in place a system of universal health care. For example, more attention is given today to this strategy in Massachusetts where the uninsured percentage is low enough that public policy aimed at assisting individuals can almost certainly fill the gap. In spite of the public and private expenditure for health which is 13 % of GDP, the American health care system has mediocre results.

It follows that the relations between social position and health and the political implications therefore, should be analyzed in a broader sense that just reform of the healthcare system. It is important to broaden the concept of health policy that includes areas not normally considered where thinking about health. Investments in social and economic policy made upstream can pay health dividends downstream (Isaacs and Schroeder, 2004).

There are several reasons to believe that the urban social patterning of income inequality is an important factor. Thus, the interest in examining urban and socio-economic policies. A city is not just a pathogene space in which there are ecological relationships between health and the environment, it is also a space which supports injustice and disadvantage for the underprivileged. Kerby et al. (2006) found that racial and ethnic composition of neighbourhood's accounts for a significant and sizable proportion of disparities in access to care. However, it is important to note, that portion attributable to neighbourhood racial and ethnic composition may not be a "neighbourhood effect" perse, but rather may simply be a reflection of unmeasured individual-level characteristics that are correlated with neighbourhood racial and ethnic composition. A clear illustration from a methodological standpoint is the ecological bias when correlations witnessed in aggregated data differ from the underlying correlations that would be observed if one were examining individual date (Eberstadt, Satel, 2004). In addition there is a need to distinguish between competing hypotheses about the pathway between residential segregation, life chances and health chances (Ross et al., 2001). Isaacs and Schroeder (2004) pointed out that policies regarding education, population based funding models, housing, education and transportation cannot be divorced from their effects on health. On the basis of what is known about

early-childhood development, improving preschool and elementary education may well be the most beneficial investment to improve health.

Another policy concerns health promotion: enabling people with lower economic classes to adopt new healthy forms of behaviour and attending to those social and environmental factors that encourage healthy behaviour (Deaton, 2002).

There is also a demand for the accountability in the U.S medical system. In 2002, the Institute of Medicine, an independent group, reported that members of racial and ethnic minorities are given lower quality healthcare than whites even when they make as much money and carry the same insurance. The reasons for disparities are complex and will require equally complex solutions touching on everything from issues of cultural sensitivity to better monitoring of which patients get what kind of care and why. The only way to eliminate disparities is to change the rules, to hold healthcare providers accountable for discriminatory treatment. The authors of the studies appearing in the *New England Journal of Medicine* of August 2005 were unanimous in insisting that doctors, hospitals and insurers move beyond talking about disparities and figure out what can be done to close gaps.

The preceding developments illustrate the following points. We can't deny the existence of individual and population inequalities faced with sickness and death. The evidence is fairly clear that reductions in inequalities in health are closely linked to reductions in societal inequality. Improved access to health enhancing resources may improve health for both high and low social status groups without reducing the health disparity between them. Reducing the SES gradient will require more fundamental changes (Williams, Collins, 1995). However Eberstadt and Satal (2004) suggested that restructuring society and reducing inequality are hardly new to social and political discourse. In an important sense, the theme is as old as the concept of modernity itself. In one form or another, versions of the same romantic, utopian call have been heard ever since writers began to imagine that we could improve humanity by purposely refrashioning the sort of society that human brings inhabited (Eberstadt, Satal, 2004, p. 36).

5. CONCLUSION

The need for a better understanding of social inequalities can not be limited to the differences in health based upon disparities in income. It is necessary to take into consideration the difficulties in daily living which confront the poorest members of the population. Revealing the frequency of depression in neighbourhoods where professional opportunities are limited and where feelings of exclusion are predominant leads one to a perception that the environment is hostile, violent, insecure, unhealthy. We are also reminded that poverty is multidimensional. According to Isaacs and Schroeder (2004) "a nation that is serious about improving the health of its people

will have to go beyond expanding medical care". Still in the U.S there is no quick fix when it comes to curing poverty. Income inequality is an economic and social ill, but the administration and the congressional majority don't seem to recognize that.

6. REFERENCES

- BARNETT, E., ARMSTRONG, D., CASPER, M. (1999) Evidence of increasing heart disease mortality among black men of low in social class, *Ann. Epidemiol.* 9, pp. 464-471.
- BLANC, D. (1995) Social determinants of health-socioeconomic status, social class, and ethnicity, *American Journal of Public Health*, 85, pp. 903-905.
- CLINCH, J.P., HEALY, J.D. (2000) Housing standards and excess winter mortality, *J. Epidemiol. Comm. Health*, 54, pp. 719-720.
- COBURN, D. (2004) Beyond the income inequality hypothesis: class, neo-liberalism, and health inequalities. *Social Science & Medicine* 58, 41-56.
- COUFFINHAL, A., DOURGNON, P., TUBEUF, S. (2004) Outils de mesure des inégalités de santé : quelques débats d'actualité, *Santé, Société et Solidarité*, 2, pp. 163-171.
- CUTTER, S.L., SOLECKY, W.D. (1996) Setting environmental justice in space and place: acute and chronic airborne toxic releases in the South-eastern United States, *Urban Geography*, 17, 5, pp. 380-399.
- DAVEY-SMITH, G., HART, C., BLANE, D., HOLE, D. (1998) Adverse socio-economic condition in childhood and cause-specific adult mortality: perspective longitudinal study, *British Medical Journal*, 316, pp. 1631-1635.
- DAVEY-SMITH, G., NEATON, J.D., WENTWORD, D., STAMLER, R., STAMLER, J. (1998) Mortality differences between black and white men in the USA: contribution of income and other risk factors among men screened for the MRFIT, *Lancet*, 351, pp. 934-939.
- DEATON, A. (2002) Policy implications of the gradient of health and wealth: an economic asks, would redistributing income improve population health? *Health AH (Millwood)* 21, 2, pp. 13-30.
- EBERSTADT, N., SATEL., S. (2004) Health and the income inequality hypothesis, Washington DC. The AEI Press, 44 p.
- EGGAR, M., MINDER, C.E., DAVEY-SMITH, G. (1990) Health inequalities and migrant workers in Switzerland, *Lancet* 29, p. 816.
- ELO I.T., PRESTON S.H. (1992) Effects of early-life conditions on adult mortality: a review *Pop. Index* 58:186-212.
- FAGGIANO, F., PARTANEN, T., KOGERINAS, M., BOFFETTA, P. (1997) Socioeconomic differences in cancer incidence and mortality (Lyon IARC, *Sci. Publ.*, 138, pp. 65-176).

- GATRELL, A.C., THOMAS, C., BENNETT, S., BOSTOCK, L., POPAY, J., WILLIAMS, G., SHAHTA-HMASEBI, S. (2000) Understanding health inequalities: locating people in geographical and social space in H. Graham (ed.). Understanding health inequalities, Buckingham. Open University Press.
- ISAACS AND SCHROEDER (2004) Class – The ignored determinant of the nation's health, The New England J. of Medicine, 351, 11, pp. 1137-1142.
- JOINT CENTER DATA BANK AFRICAN-AMERICANS AND HEALTH (2003) (<http://www.jointcenter.org/db/factsheet/lifexper.html> august 20, 2004).
- KEARNS, R.A., GESLER, W.M. (1998) Introduction, in Kearns RA, Gesler WM (eds). Putting health into place (Syracuse University Press, pp. 1-52.
- KENNEDY, P.P., KAWACHI, I., PROTHROW STITH D. (1996) Income distribution and mortality: cross sectional ecological study of the Robin Hood index in the United States. British Medical Jour 312 (7037), 1004-1007.
- KIRBY, J.B., TALIAFERRO, G., ZUVEKAS, S.M. (2006) Explaining racial and ethnic disparities in healthcare. Medical Care 44(5):64-72.
- LAMBERT, D.C. (2000) Les systèmes de santé. Paris Seuil: Economie humaine, 525 p.
- LYNCH, J., HARPER, S., DAVEY SMITH, G. (2003) Commentary: plugging leaks and repelling boarders-where to next for the SS income inequality? Int Jour Epidemiol 32(16), 1029-1036.
- MALMSTROM, M., JOHANSSON, S.E., SUNDQUIST, J. (2001) A hierarchical analysis of long-term illness and mortality in socially deprived areas, Social Science and Medicine, 53, pp. 265-275.
- MARCELLA, S., MILLER, J.E. (2001) Racial differences in colorectal cancer mortality: the importance of stage and socioeconomic status, J. Clin. Epidemiol., 54, pp. 359-366.
- MARE, R.D. (1990) Socioeconomic careers and differential mortality among older men in the United States in Vallin J., D'Souza S., Pallani A. Measurement and analysis of mortality – New approaches. Oxford: Clarendon, 362-387.
- MC EWEN, B.S., SEEMAN, T. (1999) Protective and damaging effects of mediators in stress, in: Adler NE, Marmot MG, Mc Ewen BS, Sliwert J (eds). Socio-economic status and health in industrial nations (New York Academic of Science).
- MOORE, D.E., YAYWARD, M.D. (1990) Occupational careers and mortality of elderly men. Demography 27, 31-53.
- MORELLO-FROSCH, R. (2002) Discrimination and the political economy of environmental inequality. Environment and Planning C. Government and Polity, 20, 477-496.
- NATIONAL CENTER FOR HEALTH STATISTICS (2002) Health, United States (Hyasttville, Md: National Center for Health Statistics DHHS publication no (PHS).1232, p. 198).

- O'CAMPO, P, XUE, X., WANG, M.C., GAUGHY, M. (1997) Neighbourhood risk factors for low birth weight in Baltimore: a multilevel analysis, *American Journal Public Health*, 87, pp. 1113-1118.
- PICHERAL, H. (1999) Risques et inégalités de santé: de la salubrité à l'équité, *Herodote*, 92, pp. 50-68.
- PRATT, M., MACERO, C.A., BLANTON, C. (1999) Levels of physical activity and inactivity in children and adults in the United States: current evidence and research issues, *Med. Sci. Sports Exerc.*, 31, p. 5527-5537.
- ROGOT, E. (1992) A mortality study of 1.3 million persons by demographic, social and economic factors : 1979-1985 follow-up : US National Longitudinal Mortality Study, Bethesda : Natl. INST. HEALTH, NATL. HEART, LUNG AND BLOOD INST.
- ROSS, N.A., WOLFSON, M.G., DUNN, J.R., BERTHELOT, J.M., KAPLAN, G.A., LYNCH, J.W. (2000) Relation between income inequality and mortality in Canada and the United States: cross sectional assessment using census data and vital statistics, *British Medical Journal*, 320, pp. 898-902.
- SAMET, S. (2003) Indoor environment and health: moving in the 21st century, *American Journal of Public Health*, 93, pp. 1489-1493.
- SAMPSON, R.J., MORENOFF, J.D., GANNON-ROWLEY, T. (2002) Assessing "neighbourhood effects: social processes and new directions in research, *Ann. Rev. Social*, 28, pp. 443-478.
- SHAW, M., OXFORD, S., BRIMBLECOMBE, DORLING, D. (1998) Widening inequality in mortality between 160 regions of 15 European countries in the early 1990's *Proceedings of the 8th Int. Symposium in Medical Geography*, Baltimore Md, 13-17 July, pp. 371-390.
- SINGH, G.K., MILLER, B.A., HANKEY, B.F., FEUER, E.J. (2002) Changing area socioeconomic patterns in U.S cancer mortality, 1950-1998 Part A, All Cancers among men, *Journal of the National Cancer Institute*, 94, 12, pp. 904-915.
- SUBRAMANIAN, S.U., LOCHNER, K.A., KAWACHI, I. (2003) Neighbourhood differences in social capital: a compositional artefact or a contextual construct?, *Health and Place*, 9, pp. 33-44.
- SUBRAMANIAN, S.U., KAWACHI, I. (2003) Response: in defence of the income inequality hypothesis. *Int Jour Epidemiol* 32(6), 1037-1040.
- SUSSER, M. (1993) Health as a human right: an epidemiologist's-perspective on the public health, *American Journal of Public Health*, 83, 3, pp. 418-426.
- THOMAS, S.B., QUINA, S.C. (2001) Eliminating health disparities, in: Braithwaite RL, Taylor SF (eds). *Health issues in the black community*. San Francisco: Jossey-Bass, pp. 543-563.

- THOUÉZ, J.P. (2001) Territoire et vieillissement (Paris: Presses Universitaires de France: collection Médecine et Sociétés, 124 p).
- US DEPARTMENT OF HEALTH AND HUMAN SERVICES (1985) Report of the Secretary's Task Force on black and Minority Health. Washington DC, DC. USC PD.
- VAN DOORSLAER, E., JONES, A. (2003) Inequalities in self-reported health validation of a new approach to measurement: in Workshop on health economics and public policy, Journal of Health Economics, 22, 1, pp. 61-78.
- WILLIAMS, D.R., COLLINS, C. (1995) U.S socio-economic and racial differences in health: pattern and explanations, Annu Rev Social, 21, pp. 349-386.
- WILSON, K., ROSENBERG, M. (2002) The geographies of crisis: exploring accessibility to health care in Canada, The Canadian Geographer, 46, 3, pp. 223-234.
- WOOLHANDLER, S., HIMMELSTUN, D.U., SILBER, R., BADER, M., HAMLY, M., JONES, A.A. (1985) Medical care and mortality: racial differences in preventable deaths. Int J Health Serv 15:1-11.
- YEN, I.M., KAPLAN, G.A. (1999) Neighbourhood social environment and risk of death: multilevel evidence from the Alameda Country Study, American Journal of Epidemiology, 149, pp. 898-907.

