

Part 1

Why poverty is a medical problem

by Katie Dorman, MD, MSc

Rosana Pellizzari, MD, MSc, CCFP, FRCPC

Michael Rachlis, MD, FRCPC, LLD

Samantha Green, MD, CCFP



Rent
Groceries
Child Care
My Health

LINDA IS A 58-YEAR-OLD WOMAN WHO PRESENTS TO YOUR OFFICE WITH CHEST PAIN ON EXERTION. SHE HAS HYPERTENSION, TYPE 2 DIABETES AND OSTEOARTHRITIS IN HER KNEES. HER ONLY SOCIAL SUPPORT IS HER DAUGHTER, WHO WORKS MOST EVENINGS AT A GROCERY STORE. LINDA WORKS PART-TIME IN RETAIL BUT HAS HAD DIFFICULTY MAKING IT TO WORK LATELY DUE TO SEVERE KNEE PAIN THAT LIMITS HER MOBILITY.

Her average annual before tax income is \$16,600. Efforts to control Linda's hypertension and diabetes have been met with great difficulty. She does not take her medications regularly because she cannot afford them. She tells you that she relies on a food bank and that in between visits she buys food from the convenience store next to her apartment building. She is tearful at this visit and tells you that she has not been sleeping because she is worried about eviction and how to pay her bills. You feel frustrated because it seems impossible to address Linda's health issues without addressing her financial stress

— but you're a physician, what can you do to help?

Introduction

Health follows an income gradient; individuals at the lowest income level have the poorest health. Poverty is an independent risk factor for disease, on par with traditional risk factors such as smoking or hypertension. Physicians can feel overwhelmed by the prospect of addressing this important risk factor, since the etiologies of poverty are complex and interventions for poverty are not typically taught during medical training.

There are significant costs to the health-care system attributable to poverty. As a means of determining these costs it was estimated that in 2007, increasing the income of people in the lowest income quintile in Ontario to a level comparable to those in the second quintile would reduce health-care expenditures by \$2.9 billion provincially and \$7.6 billion federally.¹

In response to growing physician concerns over the impact of social determinants on their patients' health, the Canadian Medical Association (CMA) held a series of six town hall meetings throughout the past year to

hear from Canadians on this topic.² The themes arising in these meetings formed the foundation of the recent CMA report, “Health Care in Canada: What Makes Us Sick.” Participants sent a clear message that poverty is the biggest barrier to good health and must be addressed to eliminate health inequalities in Canada.

As with other risk factors such as tobacco use and diet, physicians are in a unique position to ask about poverty and to intervene with the appropriate followup and referrals. Last year, the CMA also interviewed 32 physicians across the country who are working to address the needs of the most vulnerable in Canada. These interviews identified practical interventions that physicians can use to improve health equity including asking patients about their socioeconomic circumstances; assisting patients in accessing income supports; linking patients to community programs and services; advocating on behalf of individual patients; and adopting an equitable practice design.³ The interviewees also highlighted the issues of stigmatization and discrimination, as well as the need for increased clinical training in carrying out this type of work.

This article represents the first in a series on poverty and health, which will serve as an update to the series published in the *Ontario Medical Review* in 2008.⁴ The remainder of this series will explore practical interventions (including those noted above) that physicians can

use to address poverty at the individual patient and population levels.

Poverty In Ontario

Over the last decade, and despite recent successes in reducing child poverty, income inequality has increased in Ontario. Furthermore, there has been an increase in the number of people who face precarious employment, an increase in the number of households waiting for assisted-housing, and increased food bank use.⁵

The most recent recession has certainly had an impact. At the same time, the provincial and federal governments have cut funding to important social programs and services, such as the Community Start-Up and Maintenance Benefit, which was previously available to people on social assistance for unexpected housing or housing-related costs.

It can be challenging to understand poverty in Canada in the absence of an official “poverty line” or uniform definition of poverty. The Organization for Economic Co-operation and Development (OECD) has defined poverty as exclusion from the standards of living that are broadly available to others in the same society, with recognition that “in order to participate fully in the social life of a community, individuals may need a level of resources that is not too inferior to the norm of that community.”⁶ A detailed overview of relative

and absolute measures of poverty used in Canada is provided elsewhere.⁷

Income inequities disproportionately affect women, children, persons with disabilities, racialized Ontarians, and those who are aboriginal.⁸ Women earn on average 71 cents for every dollar earned by men, with the highest gap for racialized and aboriginal women.

Ontario has not been able to reduce the rate of child poverty by 25%, as targeted in the provincial poverty reduction plan of 2008, and one in seven children still live in poverty in Ontario.⁹ Moreover, children and youth make up 38% of food bank users, despite representing only 21% of the population.¹⁰

Racialized people are disproportionately represented among the working poor, and more commonly experience precarious work that pays minimum wage or less. Aboriginal people are also marginalized in Ontario and experience higher rates of poverty and unemployment.⁸

Health Evidence

Income is a well-recognized social determinant of health, and people living with low incomes experience higher burdens of illness, decreased life-expectancy, and higher rates of mortality than high-income earners.^{11,12,13}

Health declines as one moves down the income gradient, with differential health outcomes at every level of income. A recent Statistics Canada

OMA's Work on the Link Between Income and Health

In November 2012, the OMA was asked to consider the role of screening for poverty in primary care settings and to provide physicians with relevant resources. Part of the OMA's work in this area has involved engaging physicians who frequently encounter poverty in their practice and who have witnessed, first-hand, the impact of low income on health. These physicians have worked together to write a series of five articles on the topic, the first of which is published here. The remainder of the series will focus on office and population-based approaches to poverty. In addition, the OMA is creating a brochure for physicians, which outlines practice-relevant information and important resources for patients who struggle financially, which will be available on the OMA website.

For more information, please visit: www.oma.org/healthpromotion/IncomeandHealth

Series Overview

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2. Office approach to poverty
3. Office approach for children and families
4. Office approach focusing on specific ethnodemographic populations
5. Advanced action: population, policy, and advocacy

report on cause-specific mortality rates by income quintile highlighted these health disparities.¹⁴ The researchers linked a large, population-based sample of 2.7 million Canadians, 25 years of age or older, to the Canadian Mortality Database and income data, and calculated age-standardized mortality rates (ASMRs) for selected causes of death by income quintile. Each successively lower income quintile was associated with an increase in ASMR for almost all causes of mortality. A summary of the data for select causes of mortality is presented in Figure 1 (see below).

Adult Health

The ASMR for women in the lowest income quintile was found to be 52% higher than that of women in the highest quintile. The difference for men was even more striking, at 67%. Mortality rates were inversely related to income level for all causes studied, with the exception of prostate and breast cancers. The greatest difference in mortality between the low-income and high-income groups was seen for HIV/AIDS in women and alcohol-use disorders in men. The gradients were steepest for mortality more closely

associated with health risk behaviours. There were also gradients for causes that are potentially amenable to medical intervention, indicating differences in access, use, or quality of medical care.

Child Health

Growing up in a low-income family can have significant health and developmental implications for children and youth. The mechanisms through which low income impacts childhood development and health are complex.¹⁵

Childhood development is a dynamic process during which multiple forces within the environment interact with a child’s neurobiological factors and genetics, influencing his or her lifelong health trajectory.¹⁶ Advances in molecular genetic techniques have provided clues as to how stress early on in life can become biologically embedded and passed down through generations.

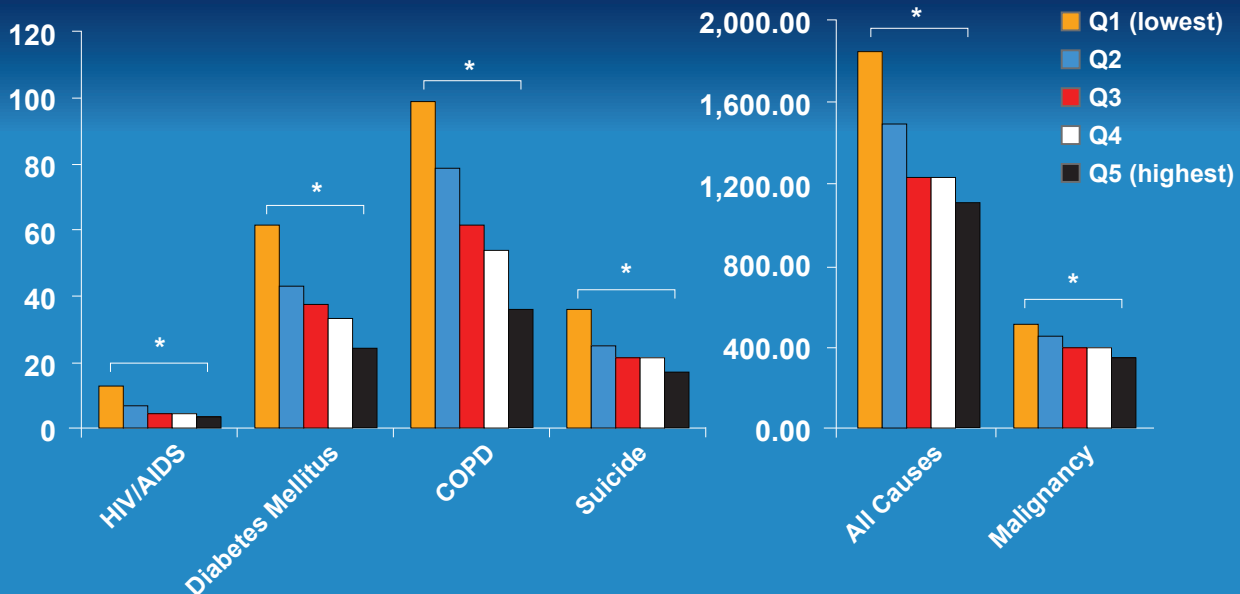
Adults who were abused in childhood were found to have a distinct methylation pattern at the glucocorticoid receptor gene promoter, corresponding to decreased glucocorticoid receptor expression in the hippocampus.¹⁷ This was associated with impaired feedback inhibition and increased activation

of the hypothalamic-pituitary-adrenal response to stress compared to those who were not abused. Prolonged cortisol release in response to stress is thought to lead to hippocampal neuron damage and may therefore impact learning and memory.^{18,19} It is increasingly evident that chronic stress experienced by children (as may happen in poverty) leads to structural alterations in brain development.

Studies have also demonstrated that adverse socioeconomic conditions in childhood can be a greater predictor of cardiovascular disease and diabetes in adults than circumstances later in life.²⁰ Poverty’s social and biological impacts can be especially profound for the youngest children. Citing this evidence, the World Health Organization Commission on Social Determinants of Health report’s first recommendation included a “...major emphasis on early child development and education...”¹¹

Children in low-income families are also commonly affected by adversities in their physical environment. Dust mites and cockroaches are more common in low-income homes, and increase risk for airway hypersensitivity, asthma, and long term decline in

Figure 1
Age-Standardized Mortality Rates For Selected Causes By Income Quintile Q1-Q5
 (male cohort, baseline age >25. Significant interquintile rate differences, Q1-Q5, are indicated with an asterisk*)



Statistics Canada (2013), Catalogue No. 82-003-X

pulmonary function.^{21,22} They are also more likely to experience low birth weight, learning disabilities, mental health problems, iron deficiency anemia, dental caries, asthma, and hospitalization than their peers from higher income families.^{21,23,24} However, health outcomes improve with food and income subsidies, indicating opportunities for intervention.²⁵

Conclusion

It is clear poverty represents a serious but modifiable threat to health. As physicians, there are steps that we can take to assist our patients who struggle financially. We know that income has a direct impact on the health of people that we see in our offices. We also know that in order to improve health we need to improve health equity.

Articles two, three, and four in this series will describe specific measures physicians can take to enhance the economic circumstances of patients like Linda. These tactics include assisting patients in accessing income supports, linking patients to community programs and services, advocating on

behalf of individual patients, and adopting an equitable practice design. The final article will discuss policy and population health approaches to poverty reduction and outline how physicians can become effective patient and community advocates. ■

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Dr. Katie Dorman is a Family Medicine Resident, St. Michael's Hospital, and a member of Health Providers Against Poverty; Dr. Rosana Pellizzari is the Medical Officer of Health for the Peterborough County City Health Unit; Dr. Michael Rachlis is a Health Policy Analyst and Adjunct Professor, Dalla Lana School of Public Health, University of Toronto; Dr. Samantha Green is a family physician based in Hamilton.

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Measuring Poverty²⁶

Low-Income Cut Off (LICO): the income threshold at which families are likely to spend 20% more than the average family on food, shelter, and clothing (relative measure).

Low-Income Measure (LIM): half the median household income, adjusted for number of people in a household (relative measure).

Market Basket Measure (MBM): measure of low income based on the cost of a specific basket of goods and services, representing a modest, basic standard of living (absolute measure).

Facts: Poverty In Ontario And Canada

- One in seven children live in poverty.²⁷
- 12% of Ontarians live below the after-tax Low-Income Measure, with single females and children from female lone-parent families representing the largest group.²⁸
- The number of Ontario households waiting for affordable, rent-geared-to-income housing has increased every year since 2007 to greater than 156,000 waiting households by the end of 2012.²⁹
- 412,998 people were assisted by food banks in 2012, representing a 39.9% increase since 2002.¹⁰
- Compared to a decade ago, a higher number of Canadians are precariously employed, characterized by temporary or part-time work, self-employment, or absence of traditional employment benefits.^{30,31}

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