Introduction

Health equity is created when individuals have the opportunity to achieve their full health potential; equity is undermined when preventable and avoidable systematic conditions constrain life choices. These conditions are known as the social determinants of health. The World Health Organization (WHO) defines the social determinants of health as the circumstances in which people are born, develop, live and age. In 2002, researchers and policy experts at a York University conference identified the following list: income and income distribution; early life; education; housing; food security; employment and working conditions; unemployment and job security; social safety net; social inclusion/exclusion; and health services.

Research suggests that 15% of population health is determined by biology and genetics, 10% by physical environments, 25% by the actions of the health care system, with 50% being determined by our social and economic environment. Any actions to improve health and tackle health inequity must address the social determinants and their impact on daily life.

The Social Determinants of Health and Health Status

Social status is one of the strongest predictors of health at the population level. There is a social gradient of health such that those with higher social status experience greater health than those with lower social status. The social gradient is evident not only when comparing the most disadvantaged to the most advantaged; within each strata, even among those holding stable middle-class jobs, those at the lowest end fare less well than those at the higher end. The Whitehall study of civil servants in the United Kingdom found that lower ranking staff have a greater disease burden and shorter life expectancy than higher-ranking staff. Differences in medical care did not account for the differences in mortality. This gradient has been demonstrated for just about any health condition.

Hundreds of research papers have confirmed that people in the lowest socio-economic groups carry the greatest burden of illness. In 2001, people in the neighbourhoods with the highest 20% income lived about three years longer than those in the poorest 20% neighbourhoods (four years for men; two years for women). Dietary deficiencies, common in food insecure households, can lead to an increased chance of chronic disease and greater difficulty in disease management. It is estimated that about 1.1 million households in Canada experience food insecurity, with the risk increasing in single-parent households and in families on social assistance.
Studies suggest that adverse socio-economic conditions in childhood can be a greater predictor of cardiovascular disease and diabetes in adults than later life circumstances and behavioural choices. Effective early childhood development offers the best opportunity to reduce the social gradient and improve the social determinants of health, and offers the greatest return on investment.

Low income contributes not only to material deprivation but social isolation as well. Without financial resources, it is more difficult for individuals to participate in cultural, educational and recreational activities or to benefit from tax incentives. Suicide rates in the lowest income neighbourhoods are almost twice as high as in the wealthiest neighbourhoods. This social isolation and its effects are most striking in Canada’s homeless population. Being homeless is correlated with higher rates of physical and mental illness. In Canada, premature death is eight to 10 times higher among the homeless.

The gradient in other social determinants can have an adverse impact as well. A study conducted in the Netherlands estimated that average morbidity and mortality in the overall population could be reduced 25-50% if men with lower levels of education had the same mortality and morbidity levels as those men with a university education. Employment status also follows this gradient, such that having a job is better than being unemployed. Unemployment is correlated with increased blood pressure, self-reported ill health, drug abuse, and reductions in normal activity due to illness or injury. Unemployment is associated with increases in domestic violence, family breakups and crime. Finally, job security is relevant. Mortality rates are higher among temporary rather than permanent workers.

Canada’s Aboriginal people face the greatest health consequences as a result of the social determinants of health. Poverty, inadequate or substandard housing, unemployment, lack of access to health services, and low levels of education characterize a disproportionately large number of Aboriginal peoples. The crude mortality rate for First Nations is higher and life expectancy lower than the Canadian average. Aboriginal peoples experience higher rates of chronic disease, addictions, mental illness and childhood abuse. Aboriginal peoples have higher rates of suicide, with suicide being the leading cause of potential years of life lost in both the First Nations and Inuit populations.

The Social Determinants of Health and Canada’s Health System

These differences in health outcomes have an impact on the health care system. Most major diseases including heart disease and mental illness follow a social gradient with those in lowest socio-economic groups having the greatest burden of illness. Those within the lowest socio-economic status are 1.4 times more likely to have a chronic disease, and 1.9 times more likely to be hospitalized for care of that disease. Chronic diseases such as diabetes account for 67% of direct health care costs and 60% indirect costs.

Research has shown that Canadians with low incomes are higher users of general practitioner, mental health, and hospital services. People in the lowest income group were almost twice as likely as those in the highest income group to visit the emergency department for treatment. Part of this may be caused by differences in access to care. Low-income Canadians are more likely to report that they have not received needed health care in the past 12 months. Those in the lowest income groups are 50% less likely than those in the highest income group to see a specialist or get care in the evenings or on weekends, and 40% more likely to wait more than five days for a doctor’s appointment.

Barriers to health care access are not the only issue. Research in the U.K. and U.S. has found that compliance with medical treatment tends to be lower in disadvantaged groups, leading to pain, missed appointments, increased use of family practice services and increased emergency department visits, and corresponding increases in cost. In the U.S., non-adherence has been attributed to 100,000 deaths annually.
Researchers have reported that those in the lowest income groups are three times less likely to fill prescriptions, and 60% less able to get needed tests because of cost.\textsuperscript{36}

These differences have financial costs. In Manitoba for example, research conducted in 1994 showed that those in the lowest income decile used services totaling $216 million (12.2%). In the same year, those in the highest income decile consumed $97 million (5.5%) of expenditures. If expenditures for the bottom half of the population by income had been the same as the median, Manitoba would have saved $319 million or 23.1% of their health care budget.\textsuperscript{37} According to a 2011 report, low-income residents in Saskatoon consume an additional $179 million in health care costs than middle income earners.\textsuperscript{38}

To reduce the burden of illness and therefore system costs, Canada needs to improve the underlying social and economic determinants of health of Canadians. However, until these changes have time to improve the health status of the population, there will still be a large burden of illness correlated to these underlying deficiencies. As a result, the health system will need to be adequately resourced to address the consequences of the social determinants of health.

Areas for action
The WHO Commission on the Social Determinants of Health identified four categories through which actions on social determinants can be taken. These include:

- reducing social stratification by reducing inequalities in power, prestige, and income linked to socio-economic position;
- decreasing the exposure of individuals and populations to the health-damaging factors they may face;
- reducing the vulnerability of people to the health damaging conditions they face; and
- intervening through health care to reduce the consequences of ill health caused by the underlying determinants.\textsuperscript{39}

All of these areas offer possibilities for action by the physician community. The following section provides suggestions for action by the medical profession through: CMA and national level initiatives; medical education; leadership and research; and clinical practice.

CMA and national level initiatives
Despite the strong relationship between the social determinants of health and health, little in the way of effective action has resulted. CMA and its partners can and should, advocate for research and push for informed healthy public policy, including health impact assessments for government policies. Additionally, targeted population health programs aimed at addressing the underlying determinants should be supported.

All Canadians need a better understanding of the health trends and the impacts of various social and economic indicators. Information about the differences in specific health indicators, collected over time,\textsuperscript{40} is essential to the task of describing underlying health trends and the impacts of social and economic interventions. Data within primary care practices could be assembled into (anonymous) community-wide health information databases, to address this need.

CMA recommends that:

1. The federal government recognize the relationship of the social determinants of health on the demands of the health care system and that it implement a requirement for all cabinet decision-making to include a Health Impact Assessment.

2. Options be examined for minimizing financial barriers to necessary medical care including pharmaceuticals and medical devices necessary for health.

3. Federal and provincial/territorial governments examine ways to improve the social and economic circumstances of all Canadians.
4. Efforts be made to educate the public about the effect of social determinants on individual and population health.

5. Appropriate data be collected and reported on annually. This data should be locally usable, nationally comparable and based on milestones across the life course.

Medical education
Medical education is an effective means to provide physicians with the information and tools they require to understand the impact of social determinants on the health of their patients and deal with them accordingly. In 2001, Health Canada published a report in which they stated that the primary goal of medical education should be the preparation of graduates who know how to reduce the burden of illness and improve the health of the communities in which they practice. Among the report’s recommendations was a call for greater integration of the social determinants in medical curricula. Although the CanMEDS framework has been a part of the Royal College of Physicians and Surgeons of Canada’s accreditation process since 2005, challenges to the integration of these competencies remain.

The report called for a greater emphasis on providing medical students with firsthand experiences in the community and with distinct populations (service learning), which addresses the difficulties in teaching the social aspects of medicine within a traditional classroom or hospital setting. Many such programs exist across the country. However, these programs are still limited and there is a need to increase the availability of longitudinal programs which allow students to build on the skills they develop throughout medical school.

Increasingly residency programs which focus on the social determinants of health are being offered. These programs are a means of providing physicians with the proper tools to communicate with patients from diverse backgrounds and reduce behaviours that marginalized patients have identified as barriers to health services. It also provides residents with physician role models who are active in the community. However, medical residents note a lack of opportunities to participate in advocacy during residency. Further, while experiential programs are effective in helping to reduce barriers between physicians and patients from disadvantaged backgrounds, greater recruitment of medical students from these marginalized populations should also be explored and encouraged.

Finally, physicians in practice need to be kept up to date on new literature and interventions regarding the social determinants. Innovations which help address health equity in practice should be shared with interested physicians. In particular, there is a need for accredited continuing medical education (CME) and a means to encourage uptake.

CMA recommends that:

6. Greater integration of information on the social determinants and health inequity be provided in medical school to support the CanMEDS health advocate role

7. All medical schools and residency programs offer service learning programs, to provide students with an opportunity to work with diverse populations in inner city, rural and remote settings, and to improve their skills in managing the impact of the social determinants on their patients.

8. CME on the social determinants of health and the physician role in health equity be offered and incentivized for practising physicians.

Leadership and research
Within many communities in Canada, there are physicians who are working to address social determinants and health equity within the patient populations they serve. This is done in many cases through collaboration with partners within and outside of the health care system. Providing these
local physician leaders with the tools they need to build these partnerships, and influence the policies and programs that affect their communities is a strategy that needs to be explored.

Evidence-based research about health equity, the clinical setting and the role of physicians is underdeveloped. Interested physicians may wish to participate in research about practice level innovations, as a means of contributing to the evidence base for ‘health equity’ interventions or simply to share best practices with interested colleagues. Further, physicians can provide the medical support to encourage the adoption of early childhood development practices for example, which support later adult health. In time, research will contribute to training, continuing medical education and potentially to clinical practice guidelines.

Physicians can provide leadership in health impact assessments and equity audits within the health care system as well. Data is essential to identify health equity challenges within a program, to propose and test measures that address the issues underlying the disparities. Formal audits and good measurement are essential to develop evidence-based policy improvements. Innovative programs such as those within the Saskatoon Health Region and the Centre for Addiction and Mental Health in Toronto are examples of using these tools to improve access and reduce inequities.

CMA recommends that:

9. Physicians who undertake leadership and advocacy roles should be protected from repercussions in the workplace, e.g., the loss of hospital privileges.

10. Physician leaders explore opportunities to strengthen the primary care public health interface within their communities by working with existing agencies and community resources.

11. Physician leaders work with their local health organizations and systems to conduct health equity impact assessments in order to identify challenges and find solutions to improve access and quality of care.

12. Physicians be encouraged to participate in or support research on best practices for the social determinants of health and health equity. Once identified, information sharing should be established in Canada and internationally.

Clinical practice

In consultation with identified health equity physician champions, a number of clinical interventions have been identified which are being undertaken by physicians across the country. These interventions could be undertaken in many practice settings given the right supports, and could be carried out by various members of the collaborative care team.1

First, a comprehensive social history is essential to understand how to provide care for each patient in the context of their life. There are a number of tools that can be used for such a consultation and more are in development. However, consolidation of the best ideas into a tool that is suitable for the majority of health care settings is needed. There is some concern that asking these questions is outside of the physician role. The CanMEDS health advocate role clearly sees these types of activities as part of the physician role. The ‘Four Principles of Family Medicine’ defined by the College of Family Physicians of Canada, affirms this role for physicians as well.

Community knowledge was identified as a strategy for helping patients. Physicians who were aware of community programs and services were able to refer patients if/when social issues arose. Many communities and some health providers have developed community resource guides. For some physicians, developing a network of community

1 A full review of the consultations is provided in the companion paper The Physician and Health Equity: Opportunities in Practice.
resources was the best way to understand the supports available.

As a corollary, physicians noted their work in helping their patients become aware of and apply for the various social programs to which they are entitled. The programs vary by community and province/territory, and include disability, nutritional supports and many others. Most if not all of these programs require physicians to complete a form in order for the individual to qualify. Resources are available for some of these programs, but more centralized supports for physicians regardless of practice location or province/territory are needed. Physicians advocate on behalf of their patients by writing letters confirming the medical limitations of various health conditions or the medical harm of certain exposures. For example, a letter confirming the role of mold in triggering asthma may lead to improvements in the community housing of an asthmatic. Additionally, letters might help patients get the health care services and referrals that they require. As identified leaders within the community, support from a physician may be a ‘game-changer’ for patients.

Finally, the design of the clinic, such as hours of operation or location, will influence the ability of people to reach care.

CMA recommends that:

13. Tools be provided for physicians to assess their patients for social and economic causes of ill health and to determine the impact of these factors on treatment design.

14. Local databases of community services and programs (health and social) be developed and provided to physicians. Where possible, targeted guides should be developed for the health sector.

15. Collaborative team-based practice be supported and encouraged.

16. Resources or services be made available to physicians so that they can help their patients identify the provincial/territorial and federal programs for which they may qualify.

17. Physicians be cognizant of equity considerations when considering their practice design and patient resources.

18. All patients be treated equitably and have reasonable access to appropriate care, regardless of the funding model of their physician.

**Conclusion**

Socio-economic factors play a larger role in creating (or damaging) health than either biological factors or the health care system. Health equity is increasingly recognized as a necessary means by which we will make gains in the health status of all Canadians and retain a sustainable publicly funded health care system. Addressing inequalities in health is a pillar of CMA’s Health Care Transformation initiative. Physicians as clinicians, learners, teachers, leaders and as a profession can take steps to address the problems on behalf of their patients.
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