A Population Health Framework for Inner-City Mental Health

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ABSTRACT *Dealing with mental health problems in the inner city presents a major challenge to planners and service providers. Traditional mental health service-oriented interventions often prove ineffective due to the complexity of individuals' needs. This article argues that a population health framework can be used to identify critical risk and protective factors and facilitate more effective, upstream, population-based interventions for mental health problems in the inner city. A community report card is seen as a useful measure of key indicators at any point in time and of changes over time at the community or neighborhood level. A number of issues with regard to report card development are identified and discussed, as is the process of creating a report card, including key domains and the organization of findings.*

Many risk factors common to the development of mental health problems and disorders are prevalent in inner-city neighborhoods. Unemployment, poverty, homelessness, teenaged pregnancy, substance abuse, inadequate housing, poor nutrition, and exposure to violence can be found throughout Canada¹ and other affluent nations. However, these problems, when concentrated in neighborhoods, have profound implications for mental health, and residents of these neighborhoods often experience more physical and mental health difficulties.

Research has shown the harmful effects on mental health of the accumulation of negative life events, particularly early-life events.^{2,3} The concentration of multiple risk factors in individuals and neighborhoods greatly increases the likelihood of disorders.⁴⁻⁸ Specifically, combined risk factors (e.g., poverty, violence, peer rejection, unemployment, unsupported early parenthood) tend to have a multiplicative effect, as opposed to an additive effect, and as such can have severely negative effects on mental health.⁵ However, protective factors (e.g., personal sense of competency and control, social support) can ameliorate the effects of risk factors.⁵

Urban environments are often characterized by diversity, which may contribute not only to well-being, but also to mental health problems. For example, Toronto, Canada's largest city, is a diverse urban environment in terms of the cultural, linguistic, and racial backgrounds and the varied individual, social, and economic resources of its residents.

A recent report from the Medical Officer of Health in Toronto provides a snapshot of the health-related issues.⁹ Economic prosperity has not been evenly distributed across neighborhoods, and issues of poverty, homelessness, and neigh-

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neighborhood deterioration persist alongside urban renewal and revitalization. In Toronto, the number of children, adults, and seniors in low-income households is increasing. Employment earnings have not kept pace with housing costs, resulting in a growing number of homeless individuals, including children in families, relying on emergency shelter services. In addition, the city has seen an increasing number of single-parent families headed by women under 24 years of age. Concerns about adequate housing and food have been raised because of an increasing reliance on food banks to meet basic needs. Annually, Toronto is home to 36% of all new immigrants and 40% of all refugee claimants arriving in Canada. Many newcomers to Toronto face inadequate housing and income and limited social supports, which can create mental health problems as these individuals try to make the transition to a new culture and lifestyle. Inner-city residents may experience a disproportionate rate of mental health problems, but may greatly benefit from targeted mental health interventions that address the determinants of these issues at the individual, group, and policy levels.

Attempts to address the complex and multidimensional nature of inner-city mental health issues require an appropriate conceptual framework to guide efforts. In this article, we argue for combining health promotion and population health approaches as a means of identifying and addressing mental health problems in the inner city. We briefly discuss the application of these approaches to the inner city and suggest indicators that could be used to assess needs and monitor inner-city mental health initiatives.

POPULATION HEALTH AND MENTAL HEALTH

Traditionally, the mental health system has responded to mental health needs after problems and disorders have developed.⁴⁻⁷ More recently, there has been a call for mental health prevention initiatives in light of a growing body of evidence that universal, selective, and indicated prevention efforts^{4,6,7,10} can be effective in reducing the incidence of many mental health problems, and that mental health problems contribute substantially to the overall burden of disease.¹¹ Multiple risk factors are implicated in the etiology of many mental health disorders, and multifaceted interventions that focus on malleable risk and protective factors can have beneficial results.^{4-7,10,12} From a population health perspective, factors that have an impact on well-being, including mental health, are diverse and include income, social support, education, employment, child development, social and physical environment, health behaviors, biology and genetics, health services, gender, and culture.^{1,7} In Australia, the Commonwealth Department of Health and Aged Care has adopted a population health framework for their National Mental Health Strategy.⁷ Using this approach, the Australian government has set mental health targets and recommended evidence-based interventions and promotion strategies to reach these targets. A population health approach to mental health “promotes health and prevents and intervenes early in the pathways to mental illness through strategies involving individuals, communities and whole population groups.”^{7(p21)} The primary goal is to achieve equity in mental health status using diverse strategies based on evidence that serious psychological problems can be prevented before disorders develop.^{1,4,7,12} A similar approach targeted directly at inner-city neighborhoods (and Canada as a whole) warrants consideration.

INFLUENCING RISK AND PROTECTIVE FACTORS

While not all determinants of health are modifiable, many are, and these have been the targets of mental health interventions. A wide range of protective and risk factors (i.e., individual, family, school, life events and situations, and community and cultural factors) influence the development of mental health problems.⁷ For example, at an individual level, factors among children such as an easy temperament, adequate nutrition, above-average intelligence, and good coping skills protect against negative mental health outcomes, whereas difficult temperament, chronic illness, poor social skills, and low self-esteem are associated with risk of the development of mental health problems.⁷ At a community level, affluence, social cohesion, strong cultural identity, and ethnic pride are protective factors, whereas poverty, discrimination, and neighborhood violence are risk factors for the development of mental health problems.^{7,11}

Economic and material deprivation have been shown to have wide-reaching effects on health. In particular, poverty and concentrations of poverty in neighborhoods negatively influence family functioning, childhood trauma and stress, housing security, neighborhood safety, and behavioral problems.^{1,4,7} Programs and policies (e.g., job skills, subsidized housing, income assistance) that address these factors are likely to have positive outcomes for a wide range of mental health problems.⁴ Conversely, failure to attend to issues of economic and material deprivation is likely to reduce the effects of prevention programs targeted at specific behaviors, skills, and/or disorders.

Many modifiable factors have negative effects on children's mental health. Preventable infections, injuries that cause brain damage, problems of parent-child attachment, deprivation of cognitive and language stimulation, low birth weight, economic deprivation, poor parenting, family conflict, and parental substance abuse and mental illness can have negative effects on children's mental health.⁴⁻⁷ Recent studies suggest that exposure early in life to stressors, including some of those listed above, results in neurobiological changes in children and adults and may increase the risk for the development of depression, anxiety, and other psychopathology.³ Early childhood abuse or neglect is associated with behavioral, social, and cognitive problems and increased rates of depression, neurosis, post-traumatic stress disorder, substance abuse, eating disorders, and antisocial personality disorder later in life.^{1,4} According to the Federal, Provincial, and Territorial Advisory Committee on Population Health :

Children in low-income neighbourhoods are at higher risk for infant death and low birth-weight. They are more likely to experience developmental delays, to be exposed to environmental contaminants that have a negative effect on health, and to experience higher rates of both intentional and unintentional injuries than children who grow up in families with higher incomes.^{1(pxiii)}

Development of secure attachments to parents/caregivers is important for children to develop trust, self-esteem, emotional control, and the ability to have positive relationships in later life.¹ According to the Institute of Medicine:

Children who cannot perform academic tasks at grade level by grade 4 and/or who develop social incompetence, impulsivity, and aggressive behaviour

during this period are at high risk for developing mental disorders, especially substance abuse, conduct disorders and depressive disorders.^{4(p249)}

Poor academic achievement has been linked with later substance use problems, depression, and delinquency.

Recognition of the importance of healthy childhood development has prompted experimentation with a wide variety of interventions that have been or could be implemented in the inner city. Prenatal and perinatal health programs, childhood immunization, home nurse visitation, parental skills education, promotion of parent-infant interaction, cognitive and language stimulation, well baby care, family support, and infant day care have been shown to influence child development positively.^{1,4} In the United States, the Head Start programs target both the development of children and parenting skills.^{6,13} In Canada, a program to attenuate aggressive behavior and prevent future delinquency provided interventions for aggressive boys (i.e., social skills training, peer modeling, role-playing reinforcement contingencies, behavioral reversal) and their parents (i.e., child-monitoring skills, positive reinforcement, effective punishment, family crisis management).¹⁴ Results from the follow-up study have shown reduced substance misuse, gang membership, and delinquent acts. Improving school quality (i.e., overall academic performance, expectations of student performance, demanding school curriculum, leadership, and parent-school relationships) has been shown to reduce early school leaving, adolescent pregnancies, substance misuse, anxiety, and depression.⁵⁻⁷ For adolescents, laws that restrict availability of alcohol have been shown to reduce rates of alcohol abuse.⁵⁻⁷

Poor working conditions, employment, and single parenting, as well as abusive or unsupportive marital/committed relationships, can introduce significant stressors and influence mental health. Unemployment can negatively influence a sense of mastery and satisfaction and introduce financial and material hardships that negatively influence mental health.⁴ Single parenthood, coupled with low income, is an important risk factor for mental health problems, such as depression for both adults and their children.⁷ However, social support, accessible health and social services, caregiver support programs, employment skills programs, programs to improve committed relationships or cope with separation or death, and healthy work environments can help prevent a wide range of problems.^{4,7} The JOBS program¹⁵ is a job search-skills enhancement workshop designed for individuals who have recently become unemployed. This program seeks to address some of the adverse effects of unemployment. Two trials have shown promising results, including higher rates of re-employment and monthly income for the experimental group. In addition, the experimental group at the 2-year follow-up had fewer depressive symptoms, and the individuals were less likely to have experienced a major depressive episode.

Given the wide range of potential risk and protective factors that could be targets for intervention, inner-city communities require information specific to their situation to plan and evaluate interventions. One method of collecting and communicating such information is described below.

COMMUNITY REPORT CARDS

The use of prevention strategies to improve the mental health of inner-city populations requires a means of assessing needs and tracking changes over time at the community level. One approach that is gaining in popularity is the use of community report cards that provide information about key indicators of interest.¹⁶ There

are a number of issues that must be considered carefully to develop a useful report card and avoid the production of a laundry list of statistics without meaning. These issues include the process for developing a report card, what domains to cover, and how to organize/focus the findings.

The San Diego Health and Human Service Agency used a five-stage approach to create a community report card for child and family health and well-being.¹⁷ They included an evaluation of other community report cards, a literature review, an extensive community information-gathering exercise, reviews by technical and community advisory groups and a national consultant, and final approval from the two boards of the partnering agencies. The goal was to develop a list of 20 indicators that did not require primary data collection and would be firmly grounded in local technical and political realities. Extensive feedback from community groups conducted in several languages helped to gain the trust and support of a diverse ethnic community. The resulting report includes 29 scientifically based or consensus-driven indicators that form a population-based, data-driven monitoring system. This approach to development requires considerable investment of staff and volunteer time, but community participation is crucial to the usefulness of a report card monitoring system.

The choice of domains to be covered by a report card will depend somewhat on the intended use. For example, those seeking to develop indicators that can be used across communities may take an approach similar to that of the Canadian Institute for Health Information,¹⁸ which employs a broad health indicator framework with four domains. *Health status* includes well-being, health conditions, disability, and death. *Determinants of health* are factors known to affect health (e.g., living and working conditions and environmental factors). *Health system performance* indicators measure the quality of health care in various categories, such as accessibility, safety, and effectiveness. *Community and health system characteristics* are measures that provide useful contextual information, but are not direct measures of health status or health care.

One of the problems with such broad-brush approaches is that they often have little, if any, variables that are mental health or addiction related. Local communities interested in the mental health of inner-city populations will find that a more focused approach is better suited to their needs. It is primarily in the domains of health status and health system performance in which broad health indicators are inadequate. Measures of psychiatric diagnosis and disability, as well as system performance, are not routinely available as a part of population-level databases and surveys. Specialized epidemiologic surveys (e.g., the Ontario Mental Health Supplement^{19,20} and Statistics Canada Canadian Community Health Survey²¹) are valuable data sources, as are more focused studies of mental health performance indicators.²²

There are numerous ways of organizing a report card so that it is relevant to more specific issues. One can concentrate attention on one subgroup by life stage (as did the San Diego project with family and child health). Other populations of particular interest could be the homeless or those using hospital services. One of the methods to improve the use of population health status indicators is to use related indicators of risk, process, and outcome.²³ For example, if the outcome of interest were the rate of suicide among youths, then risk and process variables that are known to be associated with this outcome would be reported. Rates of youth unemployment and percentage of schools with drug and alcohol prevention programs would be risk and process variables of particular interest. Obviously, there are some risk and process variables, such as low socioeconomic status and per

capita spending on support services, that are generic and could apply to multiple outcomes.⁵ But, drawing on scientific evidence⁴ that informs an underlying conceptual model about the expected inter-relationship of indicators makes it easier to interpret and validate findings.

Applying a population health template to mental health issues in the inner city includes as key elements basing decisions on evidence and demonstrating accountability for health outcomes.²⁴ For both of these elements, a community report card is a useful tool. The health status of the population should be a part of the evidence that informs which health issues and strategies will be selected for action. Tracking improvements and changes over time is necessary to evaluate the results of whatever prevention strategies are implemented.

Using Toronto as an example, the development of community-level interventions and a report card would benefit from collaboration among community members and organizations, all levels of government (municipal, provincial, and federal), local health authorities, and researchers who are familiar with the vast range of data that are collected. For example, federal government departments such as Statistics Canada and Health Canada regularly collect a wide variety of data (e.g., concerning employment and housing statistics, crime, economic growth, health status, births, deaths, infectious diseases) that could provide data about many of the determinants of health. These data could be supplemented with health service utilization data from the Ontario Health Insurance Plan database, which records fee-for-service billings by each physician in Ontario. This database covers 95% of all physician expenditures, and almost all citizens in Ontario receive insured medical services. Hospital separation data available from the Canadian Institute for Health Information provide information about patient's *International Classification of Diseases, Ninth Revision (ICD-9)*, diagnostic codes for the period starting at admission and ending at separation (i.e., when the patient was discharged, transferred, or died). The Centre for Addiction and Mental Health (CAMH) Monitor is an ongoing telephone survey of the adult population of Ontario designed to provide substance use and mental health indicators.²⁵ The Ontario Student Drug Use Survey is a biannual study that investigates drug use among students attending grades 7 through 13 in the public or Catholic education systems in Ontario.²⁶ Data on the determinants of mental health are often available from these sources at the neighborhood or municipal level (e.g., census enumeration areas) and could be used to inform community efforts. In addition, targeted research projects or efforts to negotiate inclusion of particular topic areas in existing surveys could reduce costs and duplication of effort.

SUMMARY

There are clear advantages to using a population health framework to address mental disorders in the inner city. Many disorders are linked to highly prevalent risk factors and are not likely to yield to traditional, service-oriented interventions. As well, many risk and protective factors for mental health lie outside the domain of the mental and physical health systems. Factors such as income, social status, working conditions, social and physical environments, education, biology, personal health behaviors, and others lie outside the traditional purview of these systems. However, upstream approaches focused on the amelioration of multidimensional and sectoral risk factors such as poverty and homelessness, along with interventions that enhance coping skills, strengthen social supports, and produce community co-

hesiveness, maybe more effective. As such, efforts to enhance mental health across communities require coordinated efforts of individuals and the public and private sector.

Coordinated efforts to improve mental health and well-being need to be monitored carefully to ensure that programs and projects are effective. One very useful way of assessing needs for health promotion and prevention strategies and for tracking changes over time is the community report card. Report cards may provide information about key indicators of interest and associated variables and enable communities to develop strategies to lower risk and improve programs, services, and mental health outcomes.

The field of inner-city mental health is complex and, at times, overwhelming. By adopting a population health approach, it is possible to construct models for understanding critical factors and that inform effective intervention strategies.

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