Dietitians of Canada
Les diététistes du Canada

The role of dietitians in collaborative primary health care mental health programs

DIETITIANS

Foreword

The Canadian Collaborative Mental Health Initiative (CCMHI) commends Dietitians of Canada for creating The Role of Dietitians in Collaborative Primary Health Care Mental Health Programs. This toolkit is intended to help dietitians in their care of clients who have mental illness, and, as such, provides an excellent introduction to both the complex relationship between nutrition and mental health issues and to the role that dietitians play in helping clients manage that relationship. Accordingly, this toolkit is also a superb resource for other members of the care team, to help them understand the skills and the value that dietitians bring to the team.

Dietitians of Canada have played a key role in the leadership of the Canadian Collaborative Mental Health Initiative and are ably represented on the initiative's Steering Committee by Marsha Sharp and Linda Dietrich. Throughout the initiative, Marsha and Linda have made sure that the initiative pays attention to both the broader determinants of health and the broader implications of the re-conceptualization of primary health care. CCMHI is a 2-year national project funded by Health Canada's Primary Health Care Transition Fund. The goal of CCMHI is to improve the mental health and well-being of Canadians by strengthening relationships and improving collaboration among health care providers, consumers, families and communities. The focus has been on strengthening the delivery of mental health services in the context of primary health care through collaboration and consumer-centredness. We have met our goal through four main areas:

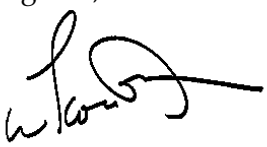
- Strengthened the case for collaborative mental health care
- Clarified the key barriers to collaborative mental health care
- Developed tools for getting at these barriers
- Built the foundation for continued strengthening of collaboration – the Canadian Collaborative Mental Health Charter

The Dietitians of Canada toolkit is one of the many toolkits developed through CCMHI. Other CCMHI resources which

might interest dietitians interested in mental health issues include an annotative bibliography which describes over 300 relevant journal articles, a paper describing the experimental evidence for better practices in collaborative mental health care and, among many other research papers, Collaborative Mental Health Care in Primary Health Care: a Review of Canadian Initiatives: Volume II. This review describes 89 collaborative mental health initiatives across Canada. Dietitians or nutritionists play an important role in 18% of the initiatives described in the review and can be found to be contributing in collaborative teams in Vancouver, Northern Saskatchewan, St. Boniface, Niagara, Southwestern Ontario, Toronto, Hamilton, Southwestern New Brunswick, Whitehorse and Yellowknife. For access to all of CCMHI's toolkits, research papers and other resources, go to www.ccmhi.ca.

One of the principles enshrined in the Canadian Collaborative Mental Health Charter, endorsed by Dietitians of Canada, is "All Canadians have the right to health services that promote a healthy, mind, body and spirit." Dietitians of Canada has been front and centre, keeping us mindful of this important unity. We look forward to dietitians all across Canada playing a key role in making this principle live and breathe.

Regards,



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Executive summary

This document is designed to serve as a mechanism to stimulate interest and discussion about the incorporation of dietitian services into primary health care mental health programs. It stems from The Canadian Collaborative Mental Health Initiative (CCMHI) that addresses the important goal of greater integration of specialized services, such as nutrition and mental health expertise, in primary care settings. The CCMHI involves twelve national organizations, including the Dietitians of Canada, to help strengthen the capacity of primary health care providers to work together to deliver quality mental health services.

This paper is a compilation of the consultation process that examined dietitian services in mental health. It began with the review of draft special population and general toolkits developed by the CCMHI Steering Committee. This review was conducted by a working group comprised of nutrition professionals in mental health to ensure representation of dietitian's role in collaborative care. Subsequently, this toolkit outlining the important role that the registered dietitian plays in collaborative primary health care mental health programs was developed. Processes used in the evolvement of this document included a review of the literature providing evidence of effectiveness of nutrition services for individuals with mental health issues, as well as directed input from working group members, independent reviewers in dietetics and health as well as consumers and their caregivers.

Individuals with mental health issues have been identified as being at nutritional risk due to a variety of factors. Several nutritional consequences occur as a result of eating disorders, mood disorders, schizophrenia-like syndromes, personality disorders, substance use disorders, dementia, attention deficit hyperactivity disorder, autism as well as developmental delays and disabilities. Specific concerns include significant weight fluctuations, potential nutrient deficiencies, feeding issues and significant nutrition-related side effects of pharmacological treatments. Furthermore, issues such as poverty, social isolation, marginalization, co-morbid medical

conditions, concurrent disorders, and aging compound the nutrition-related problems this population encounters.

Dietitians are uniquely qualified to identify the nutritional needs of individuals with mental health issues and to plan appropriate interventions within primary care contexts. Based on education in the science and management of nutrition, and practices based on evidence-based decision-making and national standards, the dietetics professional can assess clinical, biochemical, and anthropometric measures, dietary concerns, and feeding skills as well as understand the varied determinants of health acting on intervention plans.

Dietitians working in mental health can be catalysts for improved care of mental clients and effective members of collaborative mental health care teams. However, to achieve their full potential, several issues need to be considered, including the allocation of financial resources to include dietitian services in primary health care contexts, and the need to expand the mental health content and/or field experience in dietetics training. In addition, strategies to enhance accessibility of dietary services through home visiting, nutrition training of paraprofessionals and peer workers, and increased use of telemedicine services are needed. Finally, there is a need to advocate for official recognition of nutrition and mental health through national policy, incorporate nutrition issues and intervention strategies into clinical guidelines for psychiatric care, and direct research in this area. By addressing these concerns, the health and quality of life of individuals with mental health issues can be enhanced and health care resources can be used more effectively and efficiently.

Summarization of the toolkit

Background

One of the key deliverables of the Canadian Collaborative Mental Health Initiative (CCMHI) is the development of toolkits that provide hands-on advice for the implementation of collaborative mental health care. The toolkits are directed towards consumers, families and caregivers, educators and clinicians and are intended to capture the visions and goals of primary health care.

In order to further the agenda of collaborative mental health care, the CCMHI in conjunction with the Dietitians of Canada commissioned this document to examine the role of the dietitian in primary health care mental health programs. Nutrition issues are prevalent in these contexts and are commonly treated by both primary health care and specialist systems that would benefit from greater integration. This speaks to a need for innovative programs that change the daily relationship between mental health, nutrition and primary care services. Such programs can eliminate some of the barriers to well-coordinated and continuous care.

The population

For the purposes of the toolkit, reference is made to individuals diagnosed with a mental illness according to the Diagnostic and Statistical Manual of Mental Disorders or the International Classification of Diseases. These health conditions are characterized by alterations in thinking, mood, or behavior (or some combination thereof), which are associated with distress and/or impaired functioning and spawn a host of human problems that may include disability, pain, or death. The populations who would benefit from nutrition services in primary health care mental health programs include:

- Anxiety-related disorders and Post-Traumatic Stress Disorder
- Borderline Personality Disorder and Psychotic Disorders
- Attention Deficit Hyperactivity Disorder and Autism
- Primary mental illness, including individuals with mood disorders (e.g., unipolar or bipolar depression), eating

disorders, and schizophrenia syndromes. This can include those in forensics programs.
- Complex dementia, neurological, or medical conditions with associated or co-morbid psychiatric illness. These would include dementia/neurological conditions with behavioural/mental health issues and medical illness with psychiatric disorder (e.g., a person with Parkinsons that also has psychosis)
- Individuals with substance abuse disorders
- Individuals with concurrent disorders, co-morbidities, developmental delays or disabilities

The scope in which dietitian services would be beneficial is broad and therefore co-operative consultation among primary care practitioners will be needed to help to define the population who will be served in any specified collaboration. In particular, within the primary health context clarification is needed regarding the type of registered dietitian providing service. For example, the registered dietitian can be a specialist in mental health that specifically collaborates with a family physician on a particular issue. Alternatively, the dietitian can work in primary health care and counsel clients who may happen to have mental health issues. In both of these instances, the needs and perspectives will differ.

The importance of the dietitian's role in primary health care mental health programs

Individuals with mental health issues have been identified as being at nutritional risk due to a variety of factors. Several nutritional consequences occur as a result of eating disorders, mood disorders, schizophrenia-like syndromes, personality disorders, substance use disorders, dementia, attention deficit hyperactivity disorder, autism as well as developmental delays and disabilities. Specific concerns can include potential nutrient deficiencies, feeding issues and significant nutrition-related side effects of pharmacological treatments. Further to this, issues such as poverty, social isolation, marginalization, co-morbid medical conditions, concurrent disorders, and aging compound the nutrition-related problems this population encounters.

Dietitians are uniquely qualified to identify the nutritional needs of individuals with mental health issues and to plan appropriate interventions within primary care contexts. Based on education in the science and management of nutrition, and practices based on evidence-based decision-making and national standards, the dietetics professional can assess clinical, biochemical, and anthropometric measures, dietary concerns, and feeding skills as well as understand the varied determinants of health acting on intervention plans.

Key information from the consultation process

This toolkit evolved from a consultation process that examined the role of dietitian services in mental health. It began with the review of the drafts of special population and general toolkits developed by the CCMHI Steering Committee. These documents were examined by a working group of nutrition professionals employed in psychiatry, geriatrics, home care, and programs for marginalized populations. At this phase of the consultation process, members were provided with a questionnaire to help them integrate their feedback from a dietetics perspective. The questionnaire combined with communication among the working group also attempted to gather information on relevant resources and collaborative care initiatives. In addition to this, semi-structured interviews with consumers and their caregivers selected from organizations that provide support to individuals with mental health issues were conducted. These interviews were intended to gather information concerning experiences with dietitians. A total of 10 interviews were conducted. These processes as well as review of the literature providing evidence of effectiveness of nutrition services for individuals with mental health issues led to the development of this toolkit.

In order to evaluate the final toolkit, input from the working group members, independent reviewers including nutrition and other health professionals as well as consumers and their caregivers were sought. Feedback was directed by the use of a questionnaire intended to elicit opinions about the adequacy in which the toolkit outlined collaborative care, the

defined population, issues in mental health and nutrition, the visions and goals of primary health care, important considerations such as relevant policies and legislation, examples of collaborative models and definition of the role of the dietitian.

The key findings of the consultation process included:

- The direct and non-direct healthcare costs associated with mental illnesses in Canada are significant and account for at least $6.85 billion, thus any programs targeted at improving consumer symptoms and functioning, such as dietitian services, have the potential to reduce the significant cost of mental illness in Canada.
- Individuals with mental illnesses are at heightened nutrition risk. In particular, people who suffer from eating disorders, mood disorders, schizophrenia-like syndromes, substance use disorders and dementia are at risk of significant weight fluctuations, nutrient deficiencies, developing co-morbidities that affect nutritional well-being and encountering a variety of drug-nutrient interactions. Within this population are special subgroups that include marginalized individuals, children and adolescents, individuals with concurrent disorders as well as individuals with developmental delays or disabilities. Some of the important nutrition-related issues facing this group include food security, failure to thrive, swallowing and dental problems. As a multidisciplinary team member, the registered dietitian can offer these clients nutrition care plans that considers the medical, psychiatric, psychological, social, spiritual, and pharmacologic aspects of their treatment.
- Individuals with mental health issues value the role of the dietitian and research suggests that if their services are provided in a manner that meets their needs they will seek nutritional care in a primary health care context.
- Registered dietitians across Canada identified that accessibility, lack of coordination of systems, lack of funding, lack of understanding of each other's roles within an interdisciplinary team, a need to implement content and/or field experience that addresses the

nutrition needs of persons with mental health issues in training programs as well as a need for protocols that addresses the unique nutritional needs of this population are current barriers to providing nutrition care for this population.

- Registered dietitians value a client-centered, collaborative, population health approach to care. Their specialized training and skills provide meaningful enhancement to the care of individuals with mental health issues.

Recommendations and conclusions

Dietitians working in mental health can be catalysts for improved care of clients. However, to achieve their full potential, several issues need to be considered, including the allocation of financial resources to include dietitian services in primary health care contexts, and the need to expand the mental health content and/or field experience in dietetics training. Furthermore, strategies to enhance accessibility of dietary services through home visiting, nutrition training of paraprofessionals and peer workers, and increased use of telemedicine services are needed. Finally, there is a need to advocate for official recognition of nutrition and mental health through national policy, incorporate nutrition issues and intervention strategies into clinical guidelines for psychiatric care, and direct research in this area. By addressing these concerns, the quality of life of individuals with mental health issues can be enhanced and health care resources can be used more effectively and efficiently.

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Introduction

The focus of the primary health care approach is both a philosophy of health care and a model for providing health care services. Primary care reform shares several general principles (1-11) that must be implemented simultaneously, which include a health system that is accessible, has public participation, is more comprehensive, includes intersectoral cooperation, focuses on illness prevention and health promotion, and places emphasis on appropriate skills and technology. To achieve this, networks of primary care providers must be established. Examples of these include groups of existing family practices (2), larger groups of primary care practices linked with other providers of health such as registered dietitians and community services (9), or linkages of primary care practices with local community agencies and social service providers in a single organization (4;8).

"The time is now right for nutrition to become a mainstream, everyday component of mental health care, and a regular factor in mental health promotion…The potential rewards, in economic terms, and in terms of alleviating human suffering are enormous."

Dr. Andrew McCulloch, Chief Executive, The Mental Health Foundation, 2006, (12)

One important goal identified in provincial planning documents is greater integration of specialized services into primary care settings. For many health providers, attempts to accomplish this are described as journeys into unfamiliar territory. Despite this, many examples of successful programs exist and include:

- The centres locales des services communautaires (CLSCs) in Quebec
- Community health centres in many parts of the country
- The Health Services Organization (HSO) Program in Ontario
- The street health teams, which are active in most large cities across Canada

Mental health and nutrition issues are prevalent in these contexts and are commonly treated by both primary health care and specialist systems that would benefit from greater integration. This speaks to a need for innovative programs that change the day-to-day relationship between mental health, nutrition and primary care services. Such programs can eliminate some of the barriers to well-coordinated and continuous care.

The Canadian Collaborative Mental Health Initiative (CCMHI) is a partnership of twelve national professional groups, including the Dietitians of Canada. It is intended to strengthen the capacity of primary health care providers to work together to deliver quality mental health services. The project goals include:

- Analysis of the current state of collaborative mental health at the primary health care level
- Development of a charter including a shared vision of collaborative care in the domain of mental health that was endorsed by the DC Board of Directors on October 21, 2005
- Approaches and strategies for collaborative care
- Dissemination of initial findings, materials, educational tools and guidelines to support the implementation and evaluation of collaborative care approaches.

The CCMHI has developed a number of toolkits examining mental health issues and targeting special populations. As part of the development of these toolkits, a group of DC members that work in various areas of mental health reviewed and provided feedback on these documents from a dietetics perspective. These toolkits as well as several others are located on the CCMHI website (www.ccmhi.ca). As follow-up to the development of these CCMHI resources, DC was provided the opportunity to develop a toolkit about the role of registered dietitians in primary health care mental health programs.

"Registered dietitians can augment and complement family physicians' activities in preventing, assessing, and treating nutrition-related problems. This model of shared care can be applied to integrating other specialized services into primary care practice."

Crustolo AM, Kates N, Ackerman S, Schamehorn, 2005, (13)

This document is the toolkit intended to outline the role for registered dietitians in mental health and primary health care. It is divided into seven sections, some of which are relevant to specific audiences. The sections include:

- Description of the consultative process.
- Defining primary health care and the mental health populations that are best served by dietetics services.
- Examining issues pertaining to dietetics and psychiatry that are relevant to all professionals working in mental health.
- Outlining the vision and goals of primary health care and discussing them in the context of dietetics and mental

"As well as its impact on short and long-term mental health, the evidence indicates that food plays an important contributing role in the development, management and prevention of specific mental health problems such as depression, schizophrenia, attention deficient hyperactivity disorder, and Alzheimer's disease."

Dr. Deborah Cornah, Consultant, Mental Health Foundation, 2006 (12)

health. This section also speaks to all professionals working with mental health consumers.

- Important considerations pertaining to the development of primary care initiatives encompassing mental health and dietetics services. This section identifies key issues such as funding and evidence based research that will be of interest to planners of primary health care programs.
- Examples of existing programs integrating mental health and nutrition services. This is also of interest to those involved in the development of primary health care programs.
- Summarizing the potential role of the dietitian in primary health care mental health programs, which speaks to all health professionals, but particularly outlines strategies for future direction of the dietetics profession in mental health.

Dietitians interact every day with Canadians that have mental health issues who are seeking assistance to improve their health. As a result, they encounter issues related to accessibility of services, identify the need to integrate services, and work with change in the form of emerging research, knowledge and new technology. It is based on the collective knowledge and expertise of dietitians working in mental health that this document was prepared. It is anticipated this toolkit will lead the reader to a clear, in-depth understanding of the role that the registered dietitian can have in the enhancement of primary health care mental health programs.

Consultation process

"Dietitians are uniquely qualified to identify nutritional needs and to plan appropriate intervention at all points of the continuum of (mental health) care."

DC Mental Health Network, 1998, (14)

The Primary Health Care - Mental Health and Nutrition Working Group used in this project were comprised of registered dietitians from across Canada who work in psychiatry, home-care, geriatrics, and addictions as well as with programs targeted to marginalized individuals. In addition to the working group, a number of reviewers were utilized that included dietitians working in mental health, other health professionals, as well as consumers and their caregivers. Members of the working group as well as the reviewers are identified in Appendix A.

A strategy was developed to ensure multiple perspectives in the development of this toolkit. This strategy consisted of:

1. Identification of current literature relevant to the development, implementation, evaluation and sustainability of collaborative care initiatives in mental health and nutrition.
2. Review of the drafts of CCMHI special population and general toolkits with a view to ensuring dietetics was represented. Members of the advisory group and other reviewers were asked to review toolkits specific to their practice area and were given a questionnaire to help direct their feedback. The questionnaire is located in Appendix B and is adapted from the Specialty Geriatric / Generic Mental Health Questionnaire of the Geriatric toolkit.
3. Completion of semi-structured interviews with consumers that were selected members of mental health organizations (Appendix C).
4. Communication within the working group including conference calls to gather information concerning mental health and nutrition and, in particular, information on relevant resources and collaborative care initiatives.
5. Development, review and final approval of this toolkit. A questionnaire combined with this document was sent to all working group members as well as independent reviewers to provide directed feedback (Appendix D).

"I was diagnosed manic-depressive 21 years ago. Since then I have had to go on many different diets because of cholesterol, diabetes… I realize now the importance of nutrition."

Consumer,
Toolkit participant

This toolkit is a synthesis of the five aforementioned stages and includes:

- A definition of the population and primary health care.
- An exploration of the literature pertaining to mental health and nutrition and its relevance to primary health care.
- Discussion of the importance of dietitian services for those with mental health needs.
- Current challenges and potential strategies for enhancing accessibility, collaborative structures, richness of collaboration and consumer-centred care.
- The impact of fundamental structures such as policies, legislation and regulations, funding, computer technologies, evidence-based research and community needs.
- Recommendations for strategically positioning the dietitian in the planning, development and evaluation of collaborative care initiatives in mental health.

As the fundamental basis to this toolkit, primary health care and the mental health population to which it addresses is outlined in the following section.

Defining primary health care and mental health populations

"Primary Health Care is essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and country can afford. It forms an integral part, both of the country's health care system, of which it is the nucleus, and of the overall social and economic development of the community…It is the first level of contact of individuals, the family and community with the national health care system, bringing health care as close as possible to where people live and work and constitutes the first elements of a continuing health care process… Primary Health Care addresses the main health problems in the community, providing promotive, preventive, curative, supportive and rehabilitative services accordingly."

WHO, 1978

Definition of primary health care

There are several definitions of Primary Health Care. For the purposes of this toolkit, the most recognized definition set out by the World Health Organization in the 1978 Alma Ata Declaration will be used.

In 1978, WHO adopted the primary health care approach as the basis for effective delivery of health services. The primary health care approach is both a philosophy of care and a model for providing health services. The focus of the primary health care approach is on preventing illness and promoting health. WHO identified five principles of primary health care: accessibility, public participation, health promotion, appropriate skills and technology, and intersectoral cooperation. All five principles are designed to work together and must be implemented simultaneously in order to achieve the benefits of the primary health care approach.

Benefits of primary health care

Primary health care initiatives offer the foundation upon which to build a national framework for our health system (15). They seek linkages beyond traditional health care delivery such as school and workplace environments. They focus on educating the public through health promotion and disease prevention. They also encourage all Canadians to take an active role in their health.

Later in this document (Section 7) the reader will see a number of examples of primary health care. They illustrate the different mixes of professionals and ranges of services rather than a cookie-cutter response. Implementing the primary health care approach has shown to increase the quality and accessibility of care as well as create efficiencies and cost savings (15).

Defining the population

Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling

DC endorses reformed primary health care and principles for reform including the population health approach as well as addressing health determinants and their inter-relationships. The key determinants are (19):

- Income and social status
- Social support networks
- Education and literacy
- Employment/working conditions
- Social environments
- Physical environments
- Personal health practices and coping skills
- Healthy child development
- Biology and genetic endowment
- Health services
- Gender

relationships with other people, and the ability to adapt to change and to cope with adversity (16). Mental health is indispensable to personal well-being, family and interpersonal relationships, and contribution to community or society.

Everyone has mental health needs, whether or not they have a diagnosis of mental illness. While mental health is more than an absence of mental illness, for the purposes of this toolkit, it refers to individuals diagnosed with a mental illness according to the Diagnostic and Statistical Manual of Mental Disorders (17) or International Classification of Diseases (18). These health conditions are characterized by alterations in thinking, mood, or behavior (or some combination thereof), which are associated with distress and/or impaired functioning and spawn a host of human problems that may include disability, pain, or death. Mental disorders include three major categories: schizophrenia, affective disorders (major depression and bipolar disorder) and anxiety disorders (panic disorder, obsessive-compulsive disorder, posttraumatic stress disorder, and phobia).

For the purposes of this toolkit, the populations who would most benefit from nutrition services in mental health within the primary health care context include:

- Anxiety-related disorders and Post-Traumatic Stress Disorder
- Borderline Personality Disorder and Psychotic Disorders
- Attention Deficit Hyperactivity Disorder and Autism
- Primary mental illness, including individuals with mood disorders (e.g., unipolar or bipolar depression), eating disorders, and schizophrenia syndromes. This can include those in forensics programs.
- Complex dementia, neurological, or medical conditions with associated or co-morbid psychiatric illness. These would include dementia/neurological conditions with behavioural/mental health issues and medical illness with psychiatric disorder (e.g., a person with Parkinsons that also has psychosis)
- Individuals with substance abuse disorders
- Individuals with concurrent disorders, co-morbidities, developmental delays or disabilities

The role of the dietitian in mental health can include (20):

- Identifying concerns such as poor intake, significant weight changes, drug interactions, and food accessibility
- Acting as a resource to community support agencies as well as home operators for menu planning and food service standards
- Facilitating psycho-educational groups for food and nutrition

Given the broad scope of primary health care and the population defined here that would benefit from services of a dietitian, it is evident that the role of the nutrition professional has potentially infinite possibilities in the primary mental health care context. Co-operative consultations among primary care practitioners will help to define the population who will be served in any specified collaboration. In particular, within the primary health context, clarification is needed regarding the type of registered dietitian providing service. For example, the registered dietitian can be a specialist in mental health that specifically collaborates with a family physician on a particular issue. Alternatively, the dietitian can work in primary health care and counsel clients who may happen to have mental health issues. In both of these instances, the needs and perspectives will differ.

"Canadian family physicians receive relatively little training in the fundamentals of nutrition during medical school, have time constraints, and are presented with a vast amount of new information every year; all these factors hinder them from providing effective dietary counseling. Registered dietitians have specialized skills, knowledge, and training in the area of food and nutrition, yet only 16.6% of Canadian family physicians whose main practice settings are private offices, private clinics, community clinics, or community health centers indicate they have dietitians or nutritionists on staff."

Crustolo AM, Kates N, Ackerman S, Schamehorn, 2005, (13)

Issues in mental health and nutrition

Individuals diagnosed with mental illness typically have conditions that place them at nutritional risk. Dietitians provide the expertise to address these issues based on their education in the science and management of nutrition, and their commitment to evidence-based practices that adhere to nationally established standards and are monitored by provincial bodies (20).

With reference to the research literature and information gathered from the consultation process, the importance of the role of the registered dietitian in mental health is outlined.

Key lessons from the literature

When referring to the research in the contexts of mental health and nutrition, there are three specific areas to consider. First, is the large body of evidence suggesting the significant impact of mental illness on the health care system. Secondly, specific high risk subpopulations of those who suffer from mental illness need to be highlighted. Finally, and most importantly, the accumulation of knowledge regarding the role of nutrition in mental health is detailed.

Mental illness as a significant health issue

Mental illnesses are conditions associated with long-lasting disability and significant mortality through suicide, medical illness, and accidental death (21-23). The following are some key points from the literature that highlight the significance of mental health issues:

- The World Health Organization's Global Burden of Disease study revealed that clinical depression is an illness of tremendous cost and will rank as the second most burdensome illness by the year 2020 (24). Globally, nearly 3% of the total burden of human disease is attributed to schizophrenia.
- Mental disorders are among the most impairing of chronic diseases (25;26).
- Hospitalization rates for bipolar disorder in general hospitals are increasing among women and men between 15 and 24 years of age.

"I remember the first time I ever talked to a dietitian. I was completely manic and not eating. She tried to keep me focused but it was obvious we weren't getting anywhere. Later when I came down from my episode, it was helpful to talk to her."

Consumer,
Toolkit participant

- The direct and non-direct healthcare costs associated with schizophrenia are estimated to be $2.02 billion or about 0.3% of the Canadian Domestic Product (27;28). This combined with the high unemployment rate due to schizophrenia results in an additional productivity morbidity and mortality loss estimate of $4.83 billion, for a total cost estimate of $6.85 billion.
- While still a relatively rare condition, Canadian autism diagnostic trends appear to be increasing (29).
- In Canada, morbidity and mortality related to substance abuse account for 21% of deaths, 23% of potential life lost, and 8% of hospitalizations (30). Substance use disorders are associated with a host of health and social problems.
- People with personality traits that impact on their care are estimated to comprise 20-30% of the primary care population. Based on US data, about 6% to 9% of the population have a personality disorder (31).
- Anxiety disorders affect 12% of the population, causing mild to severe impairment (32).
- Approximately 3% of women will be affected by an eating disorder during their lifetime. Since 1987, hospitalizations for eating disorders in general hospitals have increased by 34% among young women under the age of 15 and by 29% among 15-24 year olds (31).
- A report from the Canadian Institute for Health Information reveals that patients with a primary diagnosis of mental illness accounted for 6% of the 2.8 million hospital stays in 2002-2003. Another 9% of hospital stays involved patients with a non-psychiatric primary diagnosis and an associated mental illness. Combined, these hospital stays accounted for one-third of the total number of days patients spent in Canadian hospitals. These stays were more than twice as long, on average, as stays not involving mental illness.
- People with mental illnesses are more likely to use emergency and urgent care (33). While there are trends towards de-institutionalization of the mentally ill, this presents many challenges to communities as these individuals tend to have significant health issues.

Past year prevalence rates of selected mental disorders in Canada (34)

Any disorder	10.9%
Depression	4.8%
Social phobia	3.0%
Alcohol dependency	2.6%
Mania	1.0%
Drug dependency	0.8%

As a result of these alarming facts, mental health issues have become a top priority on the health care agenda. Programs

targeted at improving consumer symptoms and functioning, such as individualized nutrition interventions, have the potential to make significant contributions in reducing the cost of mental illness in Canada. Primary health care provides a relevant forum to address mental health issues as there is evidence to suggest that people with mental illnesses are willing to engage with the medical system (35). This information implicates that if opportunities are provided in a manner that meets the consumer's dietetic needs, they will seek nutritional care in the primary health context.

Special populations of those who suffer from mental illness

Special populations of those who suffer from mental illness may be at particular nutrition risk. These can include:

- Marginalized individuals
- Children and adolescents
- Elderly
- Rural or isolated groups
- Individuals with co-morbidities
- Individuals with concurrent disorders
- Individuals with developmental delays or disabilities

Primary mental health care reform is also leading to many opportunities for the registered dietitian to be involved in collaborative approaches involving special populations with mental health issues. These include marginalized individuals, children and adolescents, the elderly, those living in rural and isolated regions, individuals with developmental delays or disabilities, as well as individuals with mental disorders that suffer from concurrent disorders and co-morbidities. The following highlights some of the important issues facing each of these groups:

Marginalized Individuals: This group is defined as those who are homeless (absolute or relative), individuals living with addiction, those living with disabilities, street youth, sole-support parents, gay/lesbian/bisexual/transgendered, Aboriginals, and racial minorities (including immigrants and refugees). Affective disorders are far more common in this subpopulation, ranging from 20% to 40% (36). The Royal Commission on Aboriginal peoples indicates that this group is more likely to face inadequate nutrition (37) and their overall mental health status is markedly worse than that of non-Aboriginal people by almost any measure (38).

The lives of marginalized peoples may be characterized as having unstable living conditions due to a lack of financial, social, spiritual and physical resources and inadequate support. Poor health also compounds the risks faced by homeless women who become pregnant [In one large, cross-sectional survey of homeless youth in Toronto, one-quarter of the women sampled were pregnant (39)].

"The recent and widespread appearance of trans-fat in the diet raises great concern, primarily, because these fats assume the same position as essential fatty acids in the brain, meaning vital nutrients are not able to assume their rightful position for the brain to function effectively. Trans-fats are prevalent and pervasive…"

Dr. Deborah Cornah, Consultant, Mental Health Foundation, 2006 (12)

Children and Adolescents: The literature suggests that common mental health problems among children and youth between the ages of 0-18 years include: depression, anxiety, disruptive behaviour disorders, ADHD, eating disorders and developmental disorders. Reported prevalence rates for mental health concerns in children and youth range from 15% to 20% (40-43); 5% of those between the ages of 4-17years suffer extreme impairment (44). There is evidence to suggest that eating disorder issues are becoming an increasingly significant to this group. Mental health concerns are among the most common reasons that children see a family practitioner (42).

The Elderly: It is estimated that 20% of adults over age 65 have a mental disorder, including dementia, depression, psychosis, bipolar disorder, schizophrenia and anxiety disorder (45). Older adults with mental illness face increased risk of medical illness due to the long-term effects of unhealthy lifestyles, physiological changes and compounding medical illnesses that increase the susceptibility for additional medical problems and drug side effects.

Rural or Isolated Groups: The health of a community is inversely proportional to the remoteness of its location. Health indicators consistently reveal that significant disparities exist in health outcomes between people who live in northern versus southern regions of Canada, as well as between people who live in Atlantic regions versus the rest of Canada (46). In most rural areas, the cost of the Nutritious Food Basket exceeds provincial averages. Many rural community agencies also have insufficient funds to hire a dietitian.

Individuals with Co-Morbidities: Individuals with chronic mental illnesses have been reported to have higher than expected lifetime rates of hypertension (34.1% versus 28.7% in the general population), diabetes (14.9% versus 6.4% in the general population), and heart problems (15.6% versus 11.5% in the general population) (47;48). There is also concern that these are not being addressed either in terms of prevention or treatment (49).

There are several other co-morbidities that occur in mental illness that have significant nutritional implications. The lifetime smoking rate for this population is 59%, which is much higher than the 25% for men and 21% for women in the general population. Smokers are at the highest risk for developing chronic obstructive pulmonary disease (50). Individuals with mental illness are more likely to have a chronic infection, such as HIV (about 8 times the rate in the general population), hepatitis B (about 5 times the rate of the general population) and C (about 11 times the rate of the general population) (51). Larger scale well-controlled studies indicate that DSM-IV eating disorders in adolescent females with type 1 DM are twice as common as that found in control groups (52). The co-occurrence of diabetes and eating disorders presents many unique challenges to health professionals. There is also evidence to suggest that depression is a significant health issue related to diabetes (53).

"Given that the primary health care definition includes rehabilitative services, the RD's role also needs to be recognized here. We can play a key role in forensics and with work in group homes for mental health consumers. This can enhance the consumer's quality of life in areas such as housing, vocation and relation-ships."

RD, Toolkit participant

Individuals with Concurrent Disorders: In working with people with mental illness, particular attention should be paid to the high rates of concurrent mental health and substance abuse problems. Canadian literature reports rates of concurrent disorder of 56% amongst people with bipolar disorder and 47% of people with schizophrenia (54). The risk for substance abuse problems are 3 times that of the general population for alcohol and 5 times for drug use. People with personality disorders who access primary care also have higher rates of concurrent disorders (55). People with concurrent disorders have poorer outcomes including difficulty with daily living and increased risk for HIV/AIDS.

Individuals with Developmental Delays or Disabilities: Developmental disabilities is a generic term that refers primarily to mental retardation and some of the pervasive developmental disorders. Mental retardation (56) is characterized by significantly below average intellectual functioning which has its onset before the age of eighteen years and is accompanied by significant impairment in adaptive functioning. The pervasive developmental disorders (17) are characterized by significant impairment in multiple areas of development, particularly social interaction and communication, and accompanied by stereotyped behaviour,

"Psychological factors are determinants of health which can impact the success of prevention efforts and activities. Stopping smoking, increasing exercise, improving diet are all about behaviour change which is impacted by psychological and social factors. Mood (depression, anxiety) has great impact on how a person takes care of their wellness and their illness and can greatly impact the course of chronic disease."

Associate Executive Director and Registrar, Accreditation Panel, Canadian Psychological Association

interests or activity. Five disorders are identified under the category of Pervasive Developmental Disorders: 1. Autistic Disorder, 2. Rett's Disorder, 3. Childhood Disintegrative Disorder, 4. Asperger's Disorder, and 5. Pervasive Developmental Disorder Not Otherwise Specified. Some health problems for individuals diagnosed with these conditions include increased risk for obesity, cardiovascular disease, swallowing, dental, and vision problems (57).

The role of nutrition in mental health

As previously identified many individuals with mental health issues are at heightened nutrition risk. Some of the research literature highlighting these issues are detailed in the following:

Eating Disorders: A large body of evidence exists that highlights the role of the dietitian in the prevention and treatment of eating disorders. A multi-disciplinary team approach to treatment is required to address the physical, emotional, mental, and spiritual aspects of the individual. The goals of nutrition therapy are to provide guidance that fosters a nourishing eating style and promotes normal physiologic function and physical activity as well as supporting eating behaviours that bring about a peaceful, satisfying relationship with food and eating (58).

Mood Disorders: There are often nutritional consequences of mania and depression that include anorexia and weight loss as well as the converse: increased appetite and weight gain (58-62). Psycho-dietetic investigations have also shown that some nutrients affect mood, mood state affects food consumption, many psychiatric medications have nutrition-related side effects (e.g., the side effects of tricyclic antidepressants include increased appetite, nausea and vomiting, constipation and diarrhea), and mood disorders in some clients may be a result of inborn errors of metabolism (62-65). Studies of nutrition supplements have demonstrated varying efficacies at ameliorating mood symptoms (66-69).

Investigations of the dietary intake of individuals with bipolar disorder have been typically neglected, but based on data from a small clinical trial at the University of Calgary, it appears that those with bipolar disorder have a higher

prevalence of inadequate nutrient intakes (i.e., ≤ 75% of the RDA) for many essential nutrients (70).

Some notable findings have been found with regards to nutrition and depression using the Government of Canada's National Population Health Survey (71;72). This survey allowed for the comparison of samples with and without depression based on scores of the Composite International Diagnostic Interview Short Form For Major Depression (72). Comparisons of the depressed and non-depressed samples indicated that those who were depressed were 2.5 times more likely to have food security problems, were almost 3 times more likely to need help preparing meals, and about 2 times more likely to have self-reported food allergies (70).

Schizophrenia-like Syndromes: Nutritional concerns for this group include those mentioned for mood disorders. In addition, other issues arise if the individual's symptoms include food-related delusions and hallucinations. Dietetics research in the area of mood disorders and schizophrenia-like syndromes has largely been dominated by intervention studies using a variety of vitamins, minerals, dietary neurotransmitter precursors (e.g., tryptophan as a precursor to serotonin) and other nutrient factors as treatments. Of the micronutrients examined to date, the evidence suggests that folate, vitamin B12, the essential fatty acids, and tryptophan supplementation may be effective in the treatment of mood disorders and schizophrenia-like syndromes (73-77).

Some of the usual medications used to treat Schizophrenia-like syndromes include antipsychotics, antiparkinsonian agents, antidepressants, and mood stabilizers. Many of these have significant nutrition-related side effects that include increased risk of obesity and obesity-related disorders, as well as increased blood glucose and triglycerides (78).

Substance Use Disorders: Vitamin and mineral deficiencies and excesses associated with alcohol and/or drug dependency include vitamins A, B1, B3, folate, B6, C, D, K as well as zinc, magnesium, and iron (79-81). Nutrition intervention is used in conjunction with medical, behavioural, and pharmacologic treatment to improve the efficacy of treatment and recovery from substance abuse (79;82;83).

"In order to integrate successful behaviour change strategies, we need to address and understand what promotes and limits behaviour change. Some factors are social and environmental (e.g., what kind of food is sold in school, whether schools offer physical education programs, what foods are most affordable) but some are also psychological (e.g., why do people overeat and eat the wrong foods; what is the impact of stress on diet and exercise and how else can stress be managed; the kinds of expectations and beliefs children have about body image and physical activity)."

Associate Executive Director and Registrar, Accreditation Panel, Canadian Psychological Association

Anxiety Disorders: Diet-related factors should be considered as possible precipitants of anxiety. For example, caffeine intake in some at-risk individuals can precipitate or exaggerate anxiety (84).

Dementia: The types of dementia generally seen include senile dementia of the Alzheimer's type (SDAT), and vascular dementia, such as multi-infarct dementia (MID). Other types of vascular dementia include those associated with Parkinson's disease, Huntington's disease, substance abuse, and many other conditions (85). Common nutritional concerns related to dementia include decreased intake, weight loss, anorexia, and increased energy needs associated with high levels of physical movement, unrecognized infections, dysphagia or other causes (85-87).

Attention Deficit Hyperactivity Disorder (ADHD): The relationship between diet and ADHD has been widely debated. Presently, many inconsistencies exist in research findings which may in large part be due to methodological shortcomings in the research. While the efficacy of one particular treatment has not been generally accepted, controlled and uncontrolled human trials suggest caffeine and sugar may have a role in some instances. Studies also show that the methylphenidate (Ritalin), a pharmacologic treatment for ADHD, depresses appetite in children, resulting in a slower rate of weight gain and growth (57).

Autism: To date, studies investigating the role of folic acid, vitamin B6, magnesium and vitamin B12 have been conducted. Efficacy in the treatment of autism demonstrated by controlled human trials has been found for vitamin B6 (88-90). Nutritional concerns in autism include limited food selection, strong food dislikes, pica, as well as medication and nutrient interactions (57).

Developmental Delays and Disabilities: Developmental delay occurs when children have not reached specified milestones by the expected time period. Early intervention services including nutrition resources and programs that provide support to families can enhance a child's development. Nutrition is related to secondary conditions in persons with developmental disabilities in many significant ways.

"Since nutrition is a major lifestyle factor in health promotion and in the prevention and management of some common chronic conditions such as diabetes, heart disease, and obesity, it is logical that nutrition services be positioned in the primary health care setting. In this setting, initial identification, accessible intervention and long-term relationships can be established between the client and provider."

The Primary Health Care Action Group, 2005 (91)

Nutrition may be viewed as a risk factor for secondary conditions (e.g., poor nutritional status make the secondary condition worse), nutrition can be a protective factor and many secondary conditions can further modify one's diet and create subsequent nutritional problems.

Persons with developmental disabilities and special health care needs frequently have nutrition problems including growth alterations (e.g., failure to thrive, obesity, and growth retardation), metabolic disorders, poor feeding skills, medication-nutrient interactions, and partial or total dependence on enteral or parenteral nutrition. Poor health habits, limited access to services, and long-term use of multiple medications are considered risk factors for additional health problems (57).

Some additional key facts demonstrating the importance of nutrition services for those with mental illness are outlined as follows:

- Physical co-morbid conditions influence the nutritional well-being of individuals with psychiatric illness (59). The most common of these are obesity, type 2 diabetes mellitus, dyslipidemia, liver and kidney degeneration, infectious disease such as HIV, AIDS, tuberculosis, as well as hepatitis A/B/C (36;57). Given these overlapping and interacting risks, it is apparent that individuals with mental illnesses face significant threats to their nutritional well-being.
- The transition from institutional to community-based psychiatric care carries with its many health implications, including an anticipated increase in the actual nutritional risk in these vulnerable groups (14).
- Food inaccessibility is a prevalent issue. Food security may be defined as having access at all times to nutritious, safe, personally acceptable and culturally appropriate foods, produced in ways that are environmentally sound and socially just. Homeless individuals with mental illness are particularly susceptible to food security issues. For example, they are more susceptible to foodborne illnesses as some obtain their food from strangers and garbage receptacles (92).

Some examples of where the dietitian can work with mental health consumers include:

- Treating many of the physical co-morbid conditions such as obesity, type 2 diabetes mellitus, dyslipidemia, hypertension, chronic obstructive lung disease, metabolic syndrome, liver and kidney degeneration, as well as infectious diseases such as HIV, AIDS, TB, and Hepatitis A/B/C
- Assisting the client to obtain nutritious, safe, personally acceptable and culturally appropriate foods
- Helping to minimize the nutrition-related side effects of many psychiatric medications

- Drug-nutrient interactions. The impact of antipsychotic agents as well as TCAs and pharmacologic treatments for ADHD has been previously cited. Abnormalities in vitamin D, calcium and bone status, constipation, and gum hyperplasia have been associated with the use of the anticonvulsants phenytoin and/or phenobarbital (57). Many older adults take multiple medications for extended periods of time and are at risk for complications caused by medication interactions. In addition, medication may have a longer half-life because of decreased lean body mass. Constipation is a side effect of long-term psychotropic use, which results in increased use of laxatives and stool softeners. Nutrition interventions may prevent or decrease the severity of adverse effects of medications (e.g., adequate fluid and fibre can prevent constipation).
- Nutritional knowledge and attitudes of psychiatric health professionals impact upon the care of the consumer with mental health issues. A study investigating inter-relationships among nutrition knowledge, habits, and attitudes of psychiatric healthcare providers demonstrated a comprehensive nutrition education program is essential for health care providers to promote successful nutrition education for the patients they serve (93).
- Alternative and complementary therapies are having an increasingly significant role in the treatment of mental illness. These can include herbal remedies, botanical or homeopathic preparations, use of vitamin/mineral supplements, and so-called "Orthomolecular medicine". While there may be benefit to some of these therapies in some clients, correct understanding of deficiencies and excesses are important to avoid the development of serious health problems. Clients may purchase nutrition supplement packages of herbs, vitamins, minerals, and amino acids from information supplied on the Internet, on the recommendation of family support group members, on the advice of health food store employees, and based on information in printed materials. The promise of improved symptom control prompts these purchases.

(In the primary health care setting) "such comprehensive services would include a range of health promotion and treatment services. Health promotion activities might include simple interventions such as promoting healthy lifestyle to specialized services aimed at preventing diabetes, low birth weight or failure to thrive among children or the elderly. Treatment services might range from advice to avoid high does of a particular vitamin supplement to complex interventions for management of chronic conditions…"

The Primary Health Care Action Group, 2005 (91)

Unfortunately, research related to the use of these products, including safety and efficacy, is extremely limited.

- At the present time, current treatment guidelines for many of these mental illnesses focus on both psychotherapy and psychiatric medications (94;95), but possible nutrition implications are not adequately addressed.
- Although the field of psychiatric nutrition has received inadequate attention (93), interest in this area is growing. A need for multidisciplinary, practice- and outcome-based dietetic practice and studies in psychiatric disorders is clearly evident.

As can be evidenced by this discussion, there are multiple nutrition-related problems associated with mental illness which highlights the need for the specialized services the registered dietitian can offer.

Key lessons from the review process

The review process involved consultation with registered dietitians working in various facets of mental health. In addition, input and opinions were gathered from government, professional bodies, the academic community, consumers and consumer/advocacy groups, and health professionals from various disciplines.

While there has been no formal review of dietitian services in psychiatric care, it is largely believed that current staffing levels are inadequate. While dietitian services are available in psychiatric institutions, many of those with mental health issues are treated in the community, including primary health care settings. Since access to dietetics services in the community is widely variable across Canada, many of those with mental health problems have no or limited access to dietitian services.

There are approximately 800 DC members (16% of total membership) who indicate they work in some aspect of psychiatric care. Currently, the DC Mental Health Network is conducting a survey to obtain a clear profile of dietitians and

their work in psychiatric care. In one instance, the staff to consumer ratio is reported to be 1 FTE of dietitian services in psychiatric care for 325 inpatients and nearly 1000 outpatients. Dietitians who work in community psychiatric facilities report as little as 8 hours of work per month for 25 residents. Based on an average (not high needs) family medicine model of primary health care in Ontario, it has been estimated that a ratio of MD:RD of 10:1 or lower would enable the RD to provide primarily clinical services, with follow up of clients' status, complete some health promotion activities and keep waiting lists manageable (i.e., < 1 month) (91).

"Our Mental Health Centre is a "contract-facility" and therefore jurisdictional issues arise. For example, when I cannot accept outpatient referrals from their psychiatrists I have to send them a letter referencing that I only accept referrals from family physicians. The Mental Health Centre does not have a staff dietitian; occasionally they contract services with a private practice dietitian."

RD,
Toolkit participant

One of the challenges presented to dietetics professionals is that of the expansion of public access to technology and health information on the Internet. Nutrition information may be questionable and possibly inaccurate (96) but may be accepted by the individual suffering from a mental illness seeking answers. Nationally credentialed dietetics professionals are best prepared to provide appropriate nutrition information and they must seek ways to present dietetics information to this population using technology to facilitate communication.

The goal of total inclusion for children and adults with mental health issues makes them a part of a rapidly changing culture and society. The racial and ethnic diversity of Canada continues to increase. With the increasing numbers of individuals who do not speak English, providing nutrition education materials in appropriate languages and incorporating multicultural foods have become a significant need. In addition, nutrition materials related to food preparation, selection, and buying are needed for individuals with low literacy skills.

Mental health settings in which food is served or in which individuals with mental illnesses spend time can do a lot through programming to help promote health lifestyles. For example, fruits and vegetables need to be adequately available on the menu, water and low-calorie beverages should be available and the "plate method" used in diabetes education is an easy way to teach people how to choose meals and portion helpings for healthier eating (97). Dietitians can

provide the tailored nutrition teaching and reinforcement these individuals need.

Some families may have difficulty accepting that a member of their family has a mental illness and may require extra help to incorporate nutritional interventions into their lifestyle. Poverty can have a negative impact on the person's health and development through a lack of food security. At a minimum, food security includes the availability of sufficient, nutritionally adequate, and safe food and the assurance that one can obtain adequate food without relying on emergency feeding programs or resorting to scavenging, stealing, or other desperate measures to secure food. While many adults with mental health issues are capable of working in part-time or full-time jobs, opportunities are limited.

Based on a national DC survey, some of the challenges identified in the implementation of the CCMHI Charter Principles included:

- Lack of funding
- Lack of coordination between social, education and health systems
- Lack of understanding of each other's roles within an interdisciplinary team

The health issues for individuals with mental illnesses are similar to the health issues for everyone. These include physical activity, nutrition, access to health care, clinical preventive services, oral care, and family care giving. As research in the area of human genetics increases, the incidence of genetically related mental illnesses may eventually decrease. As genetic techniques improve to identify the tendency of an individual for chronic disease such as heart disease or diabetes, new educational strategies must be developed to work with individuals with mental health issues in wellness programs to prevent such disorders (98).

Finally, a major need identified in the consultation process was to encourage education in mental health for dietitians in training. The development and implementation of content and/or field experience that addresses the nutrition needs of persons with mental health issues in undergraduate and graduate nutrition programs as well as dietetics internships is required. In particular, it is identified that skills in counseling techniques including behaviour modification need to be developed. In addition, continuing education opportunities regarding dietetics and psychiatry should be established. This could include online courses through DC as well as sessions at the annual DC conference. In relationship to this, the registered dietitian also has the opportunity for increasing the

level of nutrition knowledge among health care and human service providers.

Vision and goals of primary health care

"As dietitians, we are recognized for our specialized role. In this specialized role, one problem is physically being where the service is needed. In our case, patients often have to travel on bus routes which are not easy for them to navigate. This leads to some consumers not being able to access the service. I like the idea of providing the service in their area on a less frequent basis instead of them having to travel these distances."

RD, Toolkit participant

Provincial plans for primary care reform share several general visions for a system that is accessible, better coordinated, consumer centred, comprehensive and community focused. These general visions reflected in dietetics practice are as follows.

Accessibility

Accessibility means nutrition services are universally available to all Canadians regardless of geographic location. Distribution of nutrition professionals in rural, remote and urban communities is key to the principle of accessibility. Access involves both the availability of a regular source of nutritional care and in some instances the ability of the individual or someone else to pay for it. One strategy to enhance accessibility to dietitian's services is the recent media campaign that the DC Consulting Dietitians Network conducted to encourage worksites across Canada to have dietitian services as part of their employee insurance plans.

In general, many rural and isolated communities have difficulty recruiting qualified nutrition professionals. Nutrition-related issues specific to rural populations include increased food costs. Many rural community agencies have insufficient funds to hire a dietitian for sufficient hours. There is also difficultly in maintaining level of expertise for clients with very special nutritional needs (i.e., home tube feeding, dysphagia). Efforts to recruit dietitians to these areas through internship programs may help alleviate these issues as would the use of on-line courses and videoconferencing.

The shortage of registered dietitians in rural areas is often compounded by the lack of less formalized sources of support. Often missing, for example, is consumer and family advocacy for mental health. Also absent in many rural settings are coordinated efforts such as Assertive Community Treatment (ACT) teams that rely on numbers of patients and numerous local resources for their success (99). Nutrition programs that target informal caregivers, natural helpers, peer helpers and paraprofessionals may be of particular

"Rural residents often do experience unique stressors due to the agricultural nature of their livelihood for many people; the Farm and Rural Stress Line is an example of a service that could be better promoted and utilized. Dietitians (and all para-professionals) need to utilize some of the screening tools available and to be able to refer to appropriate services. For example, with overweight clients, looking at stress levels and eating responses is imperative to good practice. Also, especially in rural areas, consumers need to have complete confidence in the "confidentiality" factor; we must be seen as trustworthy and professional."

RD, Toolkit participant

importance in improving access to appropriate dietetics services related to mental health in many rural areas. In addition, strategies such as telemedicine and additional training options need to be considered.

Transportation support may address isolation, poverty, distance barriers to professional resources, and lower utilization in rural areas. Transportation has long been a problem in accessing mental health services, especially among the rural and poor (100). Simply providing a transit pass through social services may not be sufficient, particularly for physically or mentally challenged individuals. This suggests that a need for home visiting services by the registered dietitian or involving family or paid/volunteer drivers to ensure clients can attend their appointments. Presently, homecare dietitians are mandated to see the homebound, which is typically defined as physical incapabilities. Definitions of homebound may also need to include mental health factors.

In Canada, it has been found that a strong barrier to dietetic service is financial as there are limited publicly funded programs. Another circumstance exists when consumers lack proper identification to prove coverage, either through loss or theft. Obtaining replacement identification presents another challenge due to expense, lack of proof of residency and bureaucracy. Dietitians at all levels need to advocate for adequacy of services for mental health consumers and examine ways that a client in need of nutrition care that lacks proper identification can still access these services.

Depending on place of residence, the ability to follow prescribed regimens such as appropriate rest, exercise and nutritional requirements can be impossible to control. Due to their reliance on donations, scarce resources and a large clientele, facilities such as soup kitchens, and shelters must operate on limited menus that do not always provide adequate or appropriate nutrition for consumers on restricted or modified diets for health conditions. This speaks to a need for dietitians to be available for such community programs to assist with menu and recipe development, helping to advocate for appropriate foods and developing programs based on skills building.

"Adjustments need to be made to reinforce the role that we can play in this new collaborative approach. More dietitians need to be trained in and aware of the special needs of mental health clients and we need to be more accessible to both the client and the other professional team members."

RD, Toolkit participant

"I think we need to use (Dietitian toolkit) this in Home Care to promote more referrals from CCAC mental health clients as I think that the case managers avoid that because they are usually long and involved clients and they are not sure that they want to fund for that!"

RD, Toolkit participant

Many marginalized consumers have extreme difficulty operating in an environment that is generally geared towards consumers of a much higher socio-economic class. Similar to this is the issue that professional prejudices can also impact on diagnosis, treatment and assessment of need (101). Alienation, stigma, institutionalization, and a lack of trust in authority figures, such as health care providers, has developed over time with many marginalized consumers. This may include, for example, Aboriginal Peoples, former correctional services residents, sexual minorities and immigrant or refugee populations. This speaks to the need to invest in developing strong collaboration in care, having respect for the mental health client, and building a trusting relationship with reciprocal communication.

Individual consumers' unique life circumstances must be considered when developing a collaborative approach to care. For example, hours of operation have been shown to play a role in consumers' use of services. These consumers have many competing priorities such as finding shelter, money, and clothing, during the typical business day. Therefore, nutrition concerns may, of necessity, become a lower priority. Many within this population are transient and therefore are lost to follow-up. To facilitate compliance with nutrition counseling and education, nutrition care providers must work with consumers to identify all the factors influencing their ability to achieve or maintain good health.

For some consumers, their ability to be effective partners in their nutrition care may be affected by literacy, or physical or mental incapacity. Proper evaluation of competency and level of functioning should be carried out to negotiate a comfortable level of involvement for the consumer in their nutrition care management. However, the objective should always be to build a relationship that aids in the development of growing empowerment of the consumer in regards to their health.

Barriers to care can be found at all levels from policy and legislative concerns at the systems level to individual issues that impede access to appropriate health care. A collaborative mental health care initiative that includes registered dietitian services should explore different approaches to service

delivery, and support and empower consumers to overcome individual challenges unique to their life circumstance.

Collaborative structures

"Factors related to accessibility and collaboration in our program include:

1. *All team members have an appreciation of each other so that the team knows what each member role is.*
2. *Having team members in one place so consumers are not traveling.*
3. *Each consumer with mental illness have a "case worker" to help coordinate and ensure increased compliance."*

RD, Toolkit participant

Collaboration means health professionals from various disciplines function interdependently to meet the needs of consumers. It also recognizes that health and well-being are linked to both economic and social policy. Collaboration or inter-sectoral cooperation also means experts in the mental health sector are working with experts in education, financing, housing, employment, immigration, etc. Shared vision is the basis of any successful collaborative mental health care initiative. This involves bringing all key stakeholders, including consumers, to the table.

Collaborative practice involves patient-centred care with a minimum of two caregivers from different disciplines working together with the care recipient to meet the assessed health care needs (102). A variety of strategies for providing interdependent care exists. For example, they can be ad hoc collaborations that are developed to deal with issues of immediate concern and then disbanded after the resolution of the acute problem. They can be brokered service models where a primary care provider has developed informal relationships with other providers and through referral or interagency service agreements obtain access for the consumer to external services without actual reciprocal collaboration. Initiatives might also provide diverse services in one setting with complete integration of operations. With such a collaborative effort, services tare streamlined and a permanency of service integration occurs. This also allows for strong collaboration outside the core service group with such important services as shelters, drop-in centres and other advocacy groups or service providers. This type of arrangement tends to be most successful with the full integration of services that have the flexibility to treat a wide spectrum of illness severities.

In considering the different types of strategies available, it is important to note that not all nutrition services need to be provided by the same dietitian in the same practice setting as other primary care providers. An effective

"Primary health care is delivered in many settings such as the workplace, home, schools, health care institutions, the offices of health providers, homes for the aged, nursing homes, day-care centers and community clinics. It is also available by telephone, health information services and the Internet."

National consultations for the collaborative mental health care Charter: synthesis report, 2006 (103)

networking/referral system that links dietitians and other care providers, working in variety of community-based settings, would significantly improve continuity of care for the mental health consumer. Depending on the client's needs, appropriate linkage with dietitians of different mandates can be made. Table 1 outlines how dietitians from a variety of settings can provide complimentary services for the key elements of primary health care. It is important to note, however, that sufficient staffing in each setting is essential to provide the required care needed by mental health consumers.

Attitudinal barriers have been identified as an issue in collaborative mental health care (103). In a national consultation process, comments across providers of various health disciplines indicated that lack of mutual respect, territoriality, "silo mentality", "turf wars" and "professional protectionism" impeded collaborative practice. Further to this, attitudinal barriers were seen as a critical issue that must be addressed in order to effectively deliver mental health services.

Key elements in establishing collaborative service include involving all partners as equal, building strong linkages to hospital programs, developing clear memorandums of agreement, clarifying the roles and responsibilities of all team members, and developing clear protocols for sharing of information. Dietitians can contribute a lot to these elements given their skills in community development. In particular, the services outlined in Table 1 offer significant contributions to the mental health consumer in terms of health promotion and illness prevention.

Table 1: A network of dietetics services relative to key elements of primary health care*					
		Key elements of primary health care (PHC)			
Dietetic practice settings	**% Dietitians in practice setting****	**Range of comprehensive PHC nutrition services provided**	**Utilizes population health strategies**	**Applies collaborative practice**	**Affordable and cost effective*****
Community health centre model with registered dietitians as a salaried member of the interdisciplinary team	6%	☑	☑	☑	☑
Public health/ community dietitians	26%	Mandate is typically to provide population health promotion and disease prevention services	☑	☑	☑
Home Care	20%	Mandate is typically to provide services for "homebound" clients at risk or with existing medical conditions	Mandate is typically to provide services for "homebound" clients at risk or with existing medical conditions	☑	☑

* Adapted from Table 2 – Dietetics practice – A complementary network of services relative to key elements in primary health care (20)

** % of dietitians in each practice setting based on approximation derived from DC's Skills and Practice Registry relative to the number of DC members working in a primary health care setting (N=1390) in 2001

*** The potential for savings relative to decreased hospitalization and long-term disability as a result of nutrition intervention has been well documented (104)

Table 1: A network of dietetics services relative to key elements of primary health care* continued…

		Key elements of primary health care (PHC)			
Dietetic practice settings	**% Dietitians in practice setting****	**Range of comprehensive PHC nutrition services provided**	**Utilizes population health strategies**	**Applies collaborative practice**	**Affordable and cost effective*****
Ambulatory/primary care practice	15%	Mandate is typically to provide services for clients at risk or with existing medical conditions	Mandate is typically to provide services for clients at risk or with existing medical conditions	☑	☑
Consulting/Private Practice	33%	☑	☑ Focus is on individuals and groups. Also provide services to community psychiatric facilities, non-profit organizations, etc.	☑ Dietitians maintains client record and liaises with other care providers as needed	☑ Fee for service is a barrier to some clients. Medical insurance coverage available in some instances

* Adapted from Table 2 – Dietetics practice – A complementary network of services relative to key elements in primary health care (20)

** % of dietitians in each practice setting based on approximation derived from DC's Skills and Practice Registry relative to the number of DC members working in a primary health care setting (N=1390) in 2001

*** The potential for savings relative to decreased hospitalization and long-term disability as a result of nutrition intervention has been well documented (104)

"This toolkit (Serious Mental Illness) has addressed a number of the issues, especially the co-morbid conditions such as diabetes, cardiac disease, and substance abuse. With true collaboration, these medical issues could be addressed in the medical system. However many of "our patients" do not do well in diabetic or cardiovascular clinics as their unique needs are not being met. Professionals at all levels need to be educated about the specific requirements of this population."

RD, Toolkit participant

Richness of collaboration

The mental health consumer has diverse and inter-related sets of determinants of health and needs thereby suggesting the requirement of a number of potential team players to support the individual. Team members should include the registered dietitian along with other professionals with mental health expertise such as those outlined in the following:

- Nurse/nurse practitioner
- Outreach worker
- Recreation therapists
- Social worker
- Translator
- Counselor
- Housing worker
- Case manager
- Family therapist
- Mental health workers
- Occupational therapist
- Physical therapist
- Pharmacist
- Psychologist
- Volunteers (including drivers)
- Dentist
- Family physician
- Psychiatrist

Other community agencies or resources can help support consumers when special needs arise. Potential community partners include:

- Housing programs
- Foodbanks
- Immigrant/refugee services
- Police/corrections
- Hospital discharge planners
- Public health
- Veterans Affairs
- Shelters/drop-ins
- Home care services
- Employment/vocational services
- Public guardian and trustees Office
- Addiction programs
- Social services
- Community psychiatric facilities
- Legal Aid
- Children's mental health agencies
- Transportation
- Rehabilitation programs (e.g., respiratory)
- Volunteer organizations/ advocacy groups
- Schools
- Religious groups
- Long term care facilities
- Meals on Wheel
- Community Kitchens/Gardens
- Buying clubs/food co-operatives
- Support groups
- Recreation
- Daycare centers
- Hospital diabetes and dyslipidemia programs

"We need to talk about mental illness more and this will help to break down the stigma attached."

RD, Toolkit participant

Service agreements or referral through brokered services can be enlisted with these community resources. In some instances, the registered dietitian can make a valuable contribution to the development and maintenance of some of the above mentioned programs (e.g., community kitchens, buying clubs and school food programs).

Consumer and family centredness

Consumer participation means clients are encouraged to participate in making decisions about their own health, identifying the health needs of their community and considering the merits of alternative approaches to addressing these needs. Involving mental health service consumers in the design, implementation and evaluation of services is imperative to their success. However, some special challenges may exist that can limit their input. For example, due to stigmatizing factors, mental health consumers are not usually seen as effective self-advocates. In addition, those in special populations may find participation in such activities especially demanding and intimidating. Nonetheless, consumers have a valuable perspective to contribute. Some strategies to enhance consumer centredness include:

"If families are present for the nutrition counseling or have separate access to dietitian, this improves the potential for better outcomes in nutrition and other areas, such as medication compliance."

RD, Toolkit participant

- Inclusive meetings between consumers and providers
- Consumer involvement in program planning processes
- Consumer participation in programs (e.g., peer helpers)
- Client advocate/complaints officers to address consumers' needs
- Consumer ability for self-referrals
- Transportation for clients who cannot readily access services

In particular, a preference for home-based care exists as the consumer may be more likely to communicate more effectively in familiar surroundings. Furthermore, their surroundings can provide valuable information for the assessment.

Most consumers utilizing primary care services bring one or more family members to their appointments, thus presenting an opportunity for family-focused care. Evidence indicates that family support, in conjunction with treatment, leads to better client and family outcomes, reduces utilization of acute

"There needs to be family centredness whenever there are family members available. It is very challenging for some consumers to give a diet history and to implement shopping, meal planning, cooking and food portioning advice. When consumers are isolated from family and social supports, I think the RD needs to be focused on what the most important outcome should be and keep the intervention advice appropriate to the individual's ability to process information and follow up."

RD, Toolkit participant

services, increases awareness among family members, improves client and family coping skills, reduces caregiver burden and improves family members' abilities to support and ill relative (105). Family caregivers require financial, emotional and practical support to help them cope with the various phases of debilitating illness affecting their loved one.

Dietitians are particularly skilled in the area of providing family focused care. Their training and experience enables them to review food selections with families to address specific needs and requests and to develop nutrition care plans that are unique to an individual's needs.

> *"My wife props me up when I am depressed. She cooks the meals and makes sure I am eating well. It only made sense to talk to a dietitian about problems I have with eating when I am ill and to have my wife there with me."*
>
> *Consumer,*
> *Toolkit participant*

Important considerations in development of initiatives

"In general, I think there is very little nutrition counseling advice made available to consumers with mental health challenges in the community."

RD, Toolkit participant

The establishment of primary mental health care initiatives incorporating nutrition services not only needs to consider the visions of primary health care, but should also incorporate factors such as familiarity with policies, legislation and regulations, current perspectives on mental health, funding sources, evidence based research, appropriate technology and the needs of the community served. In addition, considerations for planning and evaluation are key components of the process of developing these initiatives.

Policies, legislation, and regulations

"Having nationally recognized standards for nutrition and mental health would be beneficial to our profession and the consumers we work with."

RD, Toolkit participant

Legislation, professional regulatory acts, and practice standards usually vary by provincial jurisdiction. Registered dietitians are well advised to be aware of the relevant legislation in their respective province. Some of these may include:

- Legislation affecting age of majority (ability to give consent)
- Child welfare legislation (affecting duty to report cases of neglect or abuse)
- Privacy legislation, including both federal and provincial (e.g., Health Information Acts)
- Professional regulatory acts
- Environmental protection (e.g., food safety)
- Canada Health Act
- Disability legislation
- Youth Criminal Justice Act
- Convention Relating to the Status of Refugees (United Nations, 1951)
- Canadian Multiculturalism Act
- Immigration Act
- Community psychiatric facilities licensing standards
- Hospital/medical acts
- Public guardian acts
- Mental health acts
- School and daycare guidelines pertaining to the provision of food services
- Human Rights Act

- Canadian Natural Health Products Regulations

The development of respectful interdisciplinary relationships is vital to the success of the collaborative initiatives and it is therefore necessary for registered dietitians to establish agreements prior to providing service. These agreements will pertain to many basic processes including:

- Confidentiality, privacy, and information sharing.
- Documentation of nutrition interventions and maintenance of records

Respect for diversity between the participating professions is paramount to the success of these initiatives.

Current perspectives in mental health

"I think one of the important things that any health professional should realize is that having a mental illness is not necessarily a bad thing. Coping with depression, hearing voices, having visions or strange thoughts can be hard to deal with at times, but it provides a dimension that allows us to value life when we are well and offer unique ideas to what is happening in this world."

Consumer, Toolkit participant

An active and growing user and survivor movement, including self-help groups and media campaigns (e.g., Schizophrenia Society TV ads), is playing an important role in setting a new agenda for mental health care. There is an ongoing debate about the extent to which health and other professionals are equipped to engage with alternative conceptual frameworks for understanding, treating and managing mental health problems - whether such alternatives derive from secular or spiritual beliefs regarding mental health (106). Key issues include civil liberties, user and career involvement in services, challenging discrimination, alternative and complementary therapies and exploring the positive dimensions of living with a mental health problem. In working with groups with a wide range of different perspectives and backgrounds, it is most helpful for the dietitian and other health professionals to focus on strategies for solving problems, rather than trying to achieve consensus on definitions and labels.

Funding

To support primary health care networks, alternative funding arrangements are needed. Funding will vary from province to province based on which Ministry is primarily responsible for mental health. In order to promote the nutritional health of the population, and reduce the increasing burden of illness due to chronic disease, it is recommended by DC that policy decision-makers develop and apply appropriate population-

"My concern is that dietitians are scarce in numbers. This leads to our skills and expertise not being identified and therefore the funding not requested."

RD, Toolkit participant

based funding mechanisms to support primary health care nutrition services within their jurisdictions (20).

In the absence of consistent funding mechanisms, services have been developed in an ad hoc manner by various agencies with differing mandates. Dietitians in private practice have provided services to support dietary change with the financial resources to pay for services from their own pockets or with the support of supplementary health insurance. A consideration of funding dietitian services includes different remuneration models (e.g., salary, fee-for-service). Guidelines for fees for dietitians in private practice are available from the Consulting Dietitians Network (107). Pharmaceutical companies may also be approached to purchase items to enhance dietetics services (e.g., weight scales, food models) or provide funding for services.

The lack of population needs-based funding has created inequitable access to required nutrition services. However, through advocacy work the role of the dietitian can be encouraged in future initiatives. Some examples are involvement in the PHC Action Group in Ontario, work on national initiatives, role papers, development of DC web site resources on primary health care, etc. Individuals interested in finding out more about these initiatives are encouraged to contact their DC Regional Executive Director. Funding options such as seconding dietitians from hospital services could also be explored.

If research is going to be implemented in association with a program, a number of granting agencies should be considered nationally (Canadian Foundation for Dietetics Research, Canadian Institutes of Health Research, Primary Health Care Transition Fund), provincially (Alberta Heritage Foundation for Medical Research; the Center for Excellence in Child and Youth Mental Health in Ontario; BC Health and Research Foundation) and locally (some municipalities have small research funds or seed funds). Further to this, dietitians in some areas can become involved in demonstration projects to prove the worth of nutrition services. Contact mentors and DC Regional Executive Directors across the country for further details.

Appropriate technologies

Appropriate technologies refers to the importance of adjusting to "new and evolving realities" (15). It recognizes the importance of developing and testing innovative models and disseminating the results of research related to nutrition care. It also recognizes the imperative of ongoing capacity building and professional development of the dietetics where knowledge and technology infrastructure is continuously developing and changing. Information technology (e.g., as electronic records) can help to provide continuity of care among health providers and better utility of services.

Evidence-based research

There does not yet exist an extensive database of evidence-based practice research pertaining to nutrition and mental health. Many of the investigations pertaining to this area have focused on the effectiveness of different supplements to improve disease symptoms.

Future directions for nutrition and mental health research has numerous possibilities. The use of national databases such as the Canadian Community Health Survey is encouraged as they provide opportunities to ask relevant research questions pertaining to mental health and nutrition. Finally, it is suggested that where feasible the existing research literature pertaining to effectiveness of different supplements in improving mental symptoms be systematically reviewed. For example, folate has been identified as a key nutrient in mental functioning, and in the past several studies suggested that deficiency was common in patients with mental illness. However, with the implementation of folate fortification programs, it would be important to identify whether improvements in the prevalence of folate deficiencies in this population have been made.

It is also suggested to refer to the DC Practice-Based Evidence in Nutrition (PEN) database. While at this time a pathway for mental health does not exist, it provides a series of knowledge pathways that may be helpful (i.e., population health/lifecycle, food/nutrients, and professional practice), each focusing on a topic from the diverse practice of dietetics.

Elements to include in a proposed business and operational plan to provide RD services (91):

1. Detailed proposed staffing plan, which includes a list of proposed inter-disciplinary providers (expressed as fees), and a description of positions (roles and qualifications)
2. Rationale of how the proposed providers will support service delivery and address community needs
3. Key milestones and timelines for implementing the staffing/recruitment plans (for those already committed, attach a letter of commitment)
4. Identify method of provider remuneration (e.g., salary)
5. Describe financial and/or in-kind support such as contributions from sponsors and community partners
6. The total estimated funding requested

"It would be good to have a mental health pathway in PEN (Practice-Based Evidence in Nutrition), with a link to metabolic syndrome."

RD, Toolkit participant

Each pathway is developed from key practice questions and evidence-based answers, with links to tools and resources consistent with the evidence. The development of a pathway for mental health and nutrition is identified as a future need for the PEN database.

A number of tools for evaluating research are also available for the dietitian. A listing is provided in Appendix E. Key components in critiquing research conducted in this area include validity of measurements, ensuring verification of mental illness diagnosis (e.g., some studies examine depression or disordered eating behaviour, however, clinical diagnosis is not confirmed), criteria used for diagnosis (e.g., ICD versus DSM criteria) and what versions were used (e.g., diagnostic criteria has changed over time) as well as the utility of the study in terms of daily practice. In terms of evidence-based research requirements, there is a need to develop multiple strategies to ensure adequacy of registered dietitian services in general primary health care as well as investigation specific to mental health.

Community needs

"We need to advocate directly to agencies and care providers; communicate with case managers, etc – emphasize the importance of access to nutrition counseling for clients with psychiatric problems."

RD, Toolkit participant

Presently there is limited capacity across community sectors to meet unique health care needs of those with mental health needs. Collaborative care initiatives need to incorporate activities designed to educate the public about the unique nutritional needs of this group, including risk factors, available resources and supports. Building community capacity to mental health needs requires collaboration and partnerships within many sectors. These were previously identified in section 5.3 of this toolkit.

Dietitians who are skilled in community development can work with these groups to help enable individuals to live as independently as possible within their homes or home-like settings in the community.

Planning and implementation

In the planning and implementation of primary care initiatives, liaison and/or partnerships with community agencies and services are essential and can include those

mentioned in the previous section. Strategies to collaborate with the community may include:

- Identifying community champions (e.g., health care providers, local agencies, schools)
- Surveying community resources, including needs assessment
- Identifying duplication and gaps in services
- Enhancing linkages with other programs
- Involving consumers or family members on advisory or steering committees in program development
- Making programs easily accessible, flexible, age appropriate, and culturally sensitive

Registered dietitians, particularly those in public health are adept at program planning and implementation.

Evaluation

"Effectiveness can best be achieved by beginning with the end in mind, that is, starting with a clear understanding of the destination."

Stephen Covey, 1990 (108)

An important component of an appropriate service is the utilization of continuous quality improvement frameworks through periodic evaluation. This component should be incorporated as an annual deliverable for year-end reporting. Effective evaluation can allow for the expansion of funding opportunities and community buy-in.

To assess the impact of primary mental health care and nutrition initiatives a mixed methods approach (qualitative and quantitative research methodology), with triangulation is needed. The advice of a program evaluator can be invaluable in ensuring that the evaluation is reliable and valid, and meets information needs. Qualitative questions may address issues such as client satisfaction with the care process, or providers' understanding of the collaborative process, including perception of increases in frequency of linkages with care partners and richness of linkages with care partners. Possible quantitative questions include the direct and indirect costs, number and type of direct and indirect consultations, number of formal educational sessions and the evaluations for effectiveness and numbers of liaisons with community services and their effectiveness.

Program effectiveness may be demonstrated with a variety of indicators that are measures to ensure that aims and objectives are being met. These can include:

- Input measures of resources and action (e.g., identifying goals, funds and research to support the program).
- Process measures of implementation defined in the project plan (e.g., multi-disciplinary planning, effective consultation and the number of sessions/events held).
- Output measures of the immediate impact of the program (e.g., number of individuals attending events, receiving resources).
- Outcome measures of the extent to which the original objectives have been achieved (e.g., weight reduction).

"Diet and nutrition is not considered one of the more glamorous disciplines in health care. In fact, many administrators, executive management officials and others look upon food services and nutrition as an auxiliary function…This is a very big and expensive mistake."

Dr. Paule Bernier, Montreal Jewish General Hospital, 1998, (122)

Some measurements that may be used include quality of life measures, daily contact logs that track consumer service contact, improvement in food (nutrient) intakes, improvements in biochemical indicators of nutrient or disease status, patient and referral source satisfaction, changes in average service utilization within specific years, and symptom checklists. A range of assessment tools to evaluate the mental health of consumers and program effectiveness exist and include:

Cognition

- Folstein Mini Mental Status (109)

Depression

- Patient Health Questionnaire (PHQ-9) (110)
- Geriatric Depression Scale (GDS) (111)
- Hamilton Rating Scale for Depression (Ham-D) (112)
- Beck Depression Inventory (113)
- Center for Epidemiological Studies-Depression Scale (CES-D) (114)

Behaviour

- Neuropsychiatric Inventory Caregiver Distress Scale (NPI) (115)
- Young Mania Rating Scale (YMRS) (116)
- Autism Behaviour Checklist (117)

Quality of Life

- Short Form 36 (SF-36) (118)
- European Quality of Life Scale (EuroQol) (119)

Client Satisfaction

- Client Satisfaction Questionnaire (120)
- Visit Satisfaction Questionnaire (121)

It is important to note that many of the scales for individual assessment require psychiatric clinicians thereby suggesting the need for collaboration not only in program planning and implementation but also in evaluation.

Cost Effectiveness

There can be both positive health benefits and significant economic benefits associated with nutrition interventions. Located in Appendix E are examples of cost effectiveness studies and resources form other areas of nutrition that may be helpful in designing a costing or cost effectiveness study.

Selected Canadian examples

In section 5.2 some conceptual frameworks for primary health care were discussed. Factors to consider in the successful nutritional support of individuals with mental health issues include:

- Consumer-centred care with a care plan developed through consumer input
- Integrated holistic care
- Flexibility of service in components and intensity
- Engagement and continuity of care through outreach
- Therapeutic relationship built on trust
- Advocacy for consumer's well-being in the community
- Receptiveness to new roles and cross-training in other disciplines
- Low staff to consumer ratios
- Ongoing rehabilitation in all areas of instability (e.g., housing, finances, social ties, employment/education, recreation, spiritual growth and physical/mental health)

In Canada, there are examples of effective implementation of the principles of primary health care in mental health and nutrition. The following outlines specific programs that are examples of collaboration in mental health and nutrition within the primary care context.

Principles of primary health care in action

- ✓ Community-identified need
- ✓ Interdisciplinary care
- ✓ Accessibility
- ✓ Continuity and coordination of services
- ✓ Personal capacity building

The Hamilton Health Services Organization Mental Health Nutrition Program

The Hamilton Health Services Organization Mental Health Nutrition Program (HSO MHNP) was developed to:

- Increase accessibility to specialized care for primary care patients
- Strengthen links between primary care and secondary and tertiary mental health and nutrition services
- Increase family physicians' skills and comfort in managing the mental health and nutrition problems of their patients
- Increase primary care physicians' capacity to handle a broader range of mental health and nutrition problems.

"Integrating registered dietitians into family physicians' offices increases access to nutrition services and reduces waiting times. In particular, it increases access for underserved populations, such as members of ethno-cultural communities who might be reluctant to visit traditional services, patients who cannot afford the cost of those services on a private basis, and patients who would otherwise be treated by their family physicians without referral to a specialized service. Patients are seen in a familiar, trusted, and convenient setting."

AM Crustolo, N Kates, S Ackerman, S Schamehorn, 2005, (13)

Background of program

In Hamilton, where half the HSOs in Ontario were located in 1994, 13 HSOs applied for funding for mental health services. These practices were integrated into a single program, the Hamilton HSO Mental Health Program. In 1996, the remaining 23 HSOs in the Hamilton-Wentworth area applied for and were granted funds and were integrated into the HSO Mental Health Program.

Similarly, practices that applied for nutrition services were integrated into a single program coordinated by the nutrition department of the Henderson Hospital. In February 2000, administrative responsibility for this program was transferred to the Mental Health Program, which became the Hamilton HSO MHNP. The program serves a population of over 180, 000 people (about 40% of Hamilton's population).

Description of the Hamilton HSO MHNP

The program encompasses three components:

- *Mental health component*. Each practice has a permanent counselor. A psychiatrist visits each practice for half a day every 1 to 4 weeks depending on practice size and need. Counselors and psychiatrists see patients referred by the family physicians and manage an array of pediatric and adult mental health problems. They also act as a resource to physicians.
- *Nutrition component*. Each practice also has a registered dietitian (RD) who visits the practice for 3 hours to 3 days a week, depending on practice size. A RD can work in one to eight practices over the course of a week, although attempts are made to assign RDs to practices in the same geographic area to reduce traveling time.

  The RDs in the program see more than 4650 referrals a year. The RDs assess patients referred to them by the family physicians and initiate treatments or education programs according to need. The most common reasons for referral are dyslipidemias (46%), type 2 diabetes (26%), and weight reduction related to medical problems (17%) (123).

Weight management groups are run three to four times a year. Initial lipid classes are run in the majority of practices to reduce waiting times. Health promotion activities are currently focusing on pediatric, geriatric and prenatal populations. The RDs also serve as educational resources for the multidisciplinary team through case discussions, lunch-and-learns and presenting at grand rounds.

- *Central management team*. Activities in individual practices are coordinated by a central management team. Some of their responsibilities include (re)allocating resources to practices, setting program standards, circulating educational materials, linking practices with local mental health and nutrition systems, and advocating on behalf of the program.

  The team is also responsible for evaluating the program and providing feedback to the practices and reports to the funding body.

Program evaluation

Responses to the General Health Questionnaire (124-126), the CES-D (114) and the SF-36 (118) have demonstrated substantial improvement in patients using counseling and psychiatric services. Access to mental health services has greatly increased; the number of referrals for mental health assessment made by each family physician in the program has increased 10-fold since the program started (127). Referrals to inpatient services are down by 10%, and the average length of stay is 1 day shorter for patients of family physicians in the program compared with those of colleagues who are not (127).

Patients' ratings of their satisfaction with the program (using the Client Satisfaction Questionnaire (120) and the Visit Satisfaction Questionnaire (121)) have consistently been higher than 90% . Family physicians, counselors, and psychiatrists have also rated their satisfaction with the program higher than 90% since it began (128).

Specific benefits of the program have included the following:

- Increased access to timely and cost-effective services;
- Distribution of up-to-date information on local mental health and nutrition services through mailings, a quarterly newsletter, regularly scheduled meetings of program participants, and circulation of key references or articles;
- Developing guidelines, protocols, and standards for clinical activities;
- Assisting practices in resolving problems, such as finding adequate space, reducing scheduling conflicts, and gaining access to local programs and services;
- Developing and organizing the program's evaluation; and
- Representing and advocating for the program with other health service providers and the program's funding source (129).

For further details about this program contact Tracy Hussey, Nutrition Coordinator, Hamilton HSO Nutrition Program, Hamilton, ON, Email: tracy.hussey@gmail.com.

The Cool Aid Community Health Centre, Victoria, BC

Background of program

The Cool Aid Community Health Centre (CHC) was established as a clinic in 1970 and provides medical care and dental care for people who do not have health coverage, or who live in the downtown core, many of whom suffer psychiatric-related illnesses and/or other chronic health problems. In 2001, the CHC received provincial funding to develop the clinic into a comprehensive community health centre.

Program description

The centre endeavors to create an environment of trust and mutual respect between the staff and the clients it serves. Through an innovative team-based approach, the Community Health Centre provides primary health care, both acute and long term. Services at the CHC are designed to reduce the significant barriers facing the downtown population from accessing health services. Integral to the CHC is its location

in the downtown core and the expanded hours of operations to include weekends.

Shared care team composition
A highlight of the unique service delivery at the CHC is the coordination of multiple entry points. For example, nurse practitioners, physicians, mental health and addictions counselors, dietitian, acupuncturist, pharmacist and pharmacist technician, dental clinic providing a full range of care, visiting specialists, such as psychiatrists, are all possible points of entry into accessing comprehensive health care.

Principles of primary health care in action

- ✓ Community-identified need
- ✓ Interdisciplinary care
- ✓ Accessibility
- ✓ Continuity and coordination of services
- ✓ Personal capacity building

Integrated with the primary health care function, the centre offers education to nursing and medical students, as well as family practice residents and physicians interested in inner-city medicine. The CHC is also a satellite site for the Canadian HIV Trials Network and participate in multiple HIV and Hepatitis C research projects.

The centre also has an outreach component that effectively integrates a holistic approach; the CHC takes its services to where the people are located-whether on the streets, in the drop-in centres, food banks, shelters or their homes. The outreach services also provide a full range of assessment, counseling and referral services for the mentally ill and chemically dependent homeless, and those at risk of becoming homeless, in Victoria's downtown community. This contact outside the CHC builds the necessary trust for clients to then utilize the centre and the services offered.

A registered dietitian is available for 2.5 days per week to provide nutrition education and counseling to a variety of clients including those with mental illness and substance misuse issues.

For further information contact: Jan Klizs, RD, Cool Aid Community Health Centre, Victoria, BC, Phone: (250) 385-1466, Email: jklizs@coolaid.org

Defining me: Developing a healthy body image and lifestyle, Mount Saint Vincent University, Halifax

Background of program

Defining Me was developed by a university Counsellor and a Registered Dietitian to help women who are dissatisfied with their bodies to learn ways to develop a healthier body image by expanding their self-concept and by engaging in self-caring and self-nurturing behaviours. It is designed for small groups (5-10 participants) to explore and discuss body image in a safe and supportive environment. The leaders, a dietitian and a counsellor, act as facilitators as well as resource persons for the group.

Target population

The program is intended for university women of all ages and is offered free to participants. Each potential participant is screened by one of the program leaders prior to acceptance into the program. To determine eligibility, participants are asked a set of predetermined questions. Each participant who meets the program's eligibility criteria is accepted. Those accepted into the program must have some degree of body dissatisfaction yet have not been diagnosed as having an Eating Disorder and/or be undergoing treatment for an Eating Disorder. Those who have successfully undergone treatment for an Eating Disorder are accepted.

Program format and content

The program is six weeks in length and includes two-hour sessions. Each session includes a check-in, information sharing, goal setting, and group activities. Included in the program are group instruction and discussions relating to the connection between self-concept, self-esteem and body image; physiological and psychological effects of dieting; healthy eating; roots of body image dissatisfaction; cognitive and behavioural strategies to improve body image; and the importance of self-care.

Program focus and goals

The dietitian's focus is on dieting and "normalized" eating, physiological effects of dieting, healthy weight ranges and set point theory, making healthy food choices, developing

healthy meal plans, adopting healthy eating behaviours, identifying body's hunger and fullness signals, making the connection between eating and feelings, and making physical activity part of a self-care plan. The counsellor's focus is on expression of thoughts, feelings, and behaviours relating to body image; psychological effects of dieting and body image dissatisfaction; challenging negative thoughts; exploring influences on body image (roots and triggers); exploring the role of emotions in eating problems; introducing stress management and self-care strategies; and expanding self-concept. While the dietitian and the counsellor each focus on different aspects of the program, they share common goals, including to foster a healthy body image and self-concept, to promote empowerment, to encourage self-acceptance, to create a supportive and safe environment, and to encourage self-care and self-nurturing.

Principles of primary health care in action

- ✓ Community-identified need
- ✓ Interdisciplinary care
- ✓ Accessibility
- ✓ Continuity and coordination of services
- ✓ Personal capacity building

Program implementation and evaluation
This program was offered once in its original format in February/March of 2002 to five students at Mount Saint Vincent University. At the conclusion of the program, each participant completed an evaluation survey. All participants indicated an overall satisfaction with the program. Some participants, however, suggested that the program last longer and some indicated that it include more nutrition information. Taking into consideration this feedback, plans are underway to offer a slightly modified version of the program.

For further information contact: Karyn Dougherty, Consulting Dietitian, Halifax, NS, Email: kdougherty@ns.sympatico.ca.

Other examples

Some additional examples highlight the diversity of services that can be provided through primary health care. The first is the street health teams, which are active in most cities across Canada. These teams are comprised of nurses, physicians, nutritionists, social workers, lawyers and other professionals, as well as the housing and criminal justice sectors. Their clientele are "out-of-the-mainstream" populations, such as the homeless. The health of these groups is challenged by poor

"Primary care should have ready access to information on the link between diet and mental health as well as a working knowledge of the information and expertise available to support people through dietary change."

Dr. Deborah Cornah, Consultant, Mental Health Foundation, 2006 (12)

nutrition, lack of housing and poor sanitation. Many suffer from diseases such as tuberculosis, HIV/AIDS and Hepatitis C. Yet, they cannot access the health system. The street health teams bring their varied expertise to the street. Some of them focus on caring for the sick; others work on addressing the challenges these populations face – the challenges that determine their health status. In some cities, like in Ottawa, the team has raised funding and built a palliative care centre for the homeless.

Another example are telephone information systems for nutrition, which support the principle of appropriate utilization of health care resources. For example, Dial-A-Dietitian located in BC helps to engage the public in their nutritional health, fosters nutrition promotion and facilitates access to advice and services.

These are just a select few programs that are examples of primary health care in action. As can be seen, there are many opportunities for nutrition services within primary health care mental health programs.

Summary

Role of the registered dietitian in primary health care mental health programs

"All mental health centres should have a staff dietitian, addressing issues such as on-site food services, community nutrition education and education at time of initiation of weight-gaining psychotropic meds."

RD, Toolkit participant

The dietetics professional's role as an effective member of the primary health care team is to assess clinical, biochemical, and anthropometric measurements; dietary concerns; and feeding skills as well as understand the environmental, social, economic, and educational factors affecting the intervention plan for the mental health consumer. As a team player, this includes training other disciplines, families, and caregivers on food selection and preparation. Because community-based programs have financial constraints, education of the providers/staff can also influence the food selection process.

Dietitians offer a variety of unique skills to the primary health care team. They are health care professionals who apply their unique body of knowledge and expertise to support people in understanding and applying the principles of healthy eating throughout the entire life cycle. They are educated in the science and management of nutrition and dietetics and bring evidence-based decision making to their practice and adhere to nationally established standards of practice, monitored by provincial regulatory bodies (20).

Services provided by the dietetics professional are essential to the mental health consumer. Because many clients have conditions impacting physical health, the nutrition assessment should target some of these (e.g., those individuals with dysphagia or feeding problems). Cognitive assessments provide an understanding of the client's functional ability to develop appropriate treatment plans. Lower level literacy programs may also be appropriate for this population (130). Evaluation of feeding skills may be another important component of the assessment and treatment program. The goal of the feeding program may be to achieve independence without placing the client at nutritional risk. Often the dietetics professional is the team member along with occupational therapists and speech language pathologists who reinforces the plan and determines the food appropriate for the client. It is

recognized that for mental health consumers, screening may be done by another member of the health care team, who refers the client to the dietetics professional for further assessment and follow-up. Nutrition screening, assessment and treatment are key factors to help maintain the health, independence and quality of life of mental health consumers to reduce costs of institutionalization.

Dietitians utilize health promotion, disease prevention and treatment strategies that support communities and individuals to make healthy lifestyle choices. Some additional skills and perspectives for primary health care that the dietitian offers are to (131):

- Reinforce community action and development by building partnerships and applying strong communication, negotiation and problem-solving skills to address nutrition and health-related issues
- Apply knowledge of health determinants, working with communities, groups and individual clients to plan the best approach to overcoming barriers to health
- Promote behaviour change relative to food choices, eating behaviour and preparation methods to optimize health
- Promote client independence and autonomy in decision-making and build capacity for the client to achieve health
- Research and develop knowledge base necessary for defining community health indicators and measuring impact of primary health care interventions.

Table 2 outlines specific examples of how the practice of dietetics, within the primary health care context, can contribute to the enhancement and/or maintenance of the quality of life for community members with mental health issues, and improve health outcomes. Further to this, the dietitian is encouraged to seek out unique opportunities for service delivery. Examples of this may include providing care where homeless people congregate (e.g., drop-ins, outreach sites, soup kitchens, shelters) and providing incentives to promote engagement (e.g., meal vouchers). These strategies as well as those outlined in Table 2 are imperative in reducing the incidence of chronic illness and health care costs (104;132).

Based on the identified need for dietitian services in mental health, the cost-effectiveness of nutrition services, and the

numerous possibilities that the incorporation of dietitians in mental health can provide to enhance quality of life, the need for funding to support nutrition services in primary care and mental health is imperative.

"Regarding prevention of eating disorders, dietitians have a role in assuring that they are using best practice in nutrition counseling. For example, with the pediatric population, we know that many eating disorders start with a "diet" and we have a very important role in how we approach clients who might be at risk (Remembering that there is an increase in childhood and general obesity). In general, we have a role in getting the message out to parents and schools so that we are raising children with healthy body image and self-esteem who are not falling prey to the media and other cultural messages out there that help create an environment where we see increases in eating disorders."

RD, Toolkit participant

Table 2: Examples of dietetics practice contributing to the enhancement of the quality of life of individuals with mental illness*

Strategies**	Examples of actions (Current and potential)
Build healthy public policy	▪ Work with community advisory boards to establish healthy community policies affecting a variety of sectors that impact on access to healthy food choices e.g., community recreation centres, schools, workplaces, preschools and daycare centers ▪ Work with Food Policy Councils to help improve food security in communities ▪ Consult with government in setting food assistance rates to ensure those on social assistance have sufficient resources to purchase a healthy diet ▪ Consult with government to ensure food manufacturers provide nutrition labeling to help consumers make healthy food choices ▪ Consult with government to officially recognize the role of mental health and nutrition in policy documents and include mental health components in national campaigns ▪ Suggest mental health and nutrition be a theme of the Nutrition Month Campaign
Create supportive environments	▪ Assist communities to establish community kitchens, buying clubs, community gardens to promote lower cost healthy eating as well as, food safety and peer support programs ▪ Consult with community-based congregate meal programs in seniors centers, adult day care programs, and community mental health programs to ensure access to a variety of healthy choices ▪ Work with staff of community psychiatric facilities in a licensing capacity to ensure nutrition and food service standards are met ▪ Work with grocery retailers to develop “senior friendly” shopping facilities that help maintain the independence of older citizens to do their own food purchasing ▪ Develop online nutrition resources for consumers
Strengthen community action	▪ Work in partnership with Family Resource Centres to help build capacity of families and communities to address food security issues and support nutritional health of children ▪ Improving nutritional well-being and food security in an integrated school-community context such as Cooking Fun for Families programs ▪ Manage and train peer support workers in programs targeting vulnerable populations such as high risk pregnant moms, Aboriginals, and seniors ▪ Promote healthy eating and chronic disease prevention through healthy eating programs in restaurants and worksites ▪ Increase access to produce markets ▪ Promote use of traditional foods for Aboriginals and other ethnic groups

* Adapted from Table 1, The practice of registered dietitians in primary health care (20)
** Ottawa Charter, 1986

Table 2: Examples of dietetics practice contributing to the enhancement of the quality of life of individuals with mental illness* continued….

Strategies**	Examples of actions (Current and potential)
Develop personal skills	▪ Conduct supermarket tours on reading labels to teach shoppers how to make healthy choices at the point of purchase ▪ Conduct workshops on food budgeting, and developing cooking skills ▪ Provide skills training for independent living to group homes for the developmentally challenged and those with mental health issues ▪ Establish liaisons with a variety of local media to ensure they have access to a source of sound nutrition information of interest to the public ▪ Work with multi-cultural agencies to adapt Canada's Food Guide to Healthy Eating to culturally appropriate foods and language
Reorient health services	▪ Facilitate networks and referrals between dietitians and other health providers to ensure communities and clients have direct access to the range of health services (e.g., private practice dietitians, public health nutritionists, dietitians working with home care, outpatient dietitians) as well as non-traditional, and alternative health services ▪ Provide dietitian services during non-business hours and in unique settings such as shelters, drop-ins and soup kitchens ▪ Facilitate the development and implementation of screening tools for nutrition risk that health professionals can use on their mental health clients ▪ Train other providers (e.g., physicians, nurses, occupational therapists, etc.) and professionals in other sectors (e.g., social services, teachers) to extend – not replace – dietitians' expertise
Reorient health services continued…	▪ Lead demonstration projects to provide evidence of effectiveness of dietitians' services as a component of interdisciplinary health care ▪ Encourage the expansion of home care mandates to include those who are home bound due to mental health reasons ▪ Encourage automatic referral of mental health consumers to dietitians once prescribed psychiatric medications known to cause weight gain ▪ Help develop nutrition screening programs for mental health consumers and seniors ▪ Incorporate eating disorder prevention content into diabetes education programs ▪ Offer eating disorder prevention programs in high school, college and university settings ▪ Act as a resource or consultant to community psychiatric facility operators for menu planning and food service standards

* Adapted from Table 1, The Practice of registered dietitians in primary health care (20)
** Ottawa Charter, 1986

Table 2: Examples of dietetics practice contributing to the enhancement of the quality of life of individuals with mental illness* continued....

Strategies**	Examples of actions (Current and potential)
Reorient health services continued...	▪ Lead demonstration projects to provide evidence of effectiveness of dietitians' services as a component of interdisciplinary health care ▪ Encourage the expansion of home care mandates to include those who are home bound due to mental health reasons ▪ Encourage automatic referral of mental health consumers to dietitians once prescribed psychiatric medications known to cause weight gain ▪ Help develop nutrition screening programs for mental health consumers and seniors ▪ Incorporate eating disorder prevention content into diabetes education programs ▪ Offer eating disorder prevention programs in high school, college and university settings ▪ Act as a resource or consultant to community psychiatric facility operators for menu planning and food service standards
Illness prevention strategies	
	▪ Train home care workers, case managers as well as staff of small community psychiatric facilities in nutritional risk identification to identify and refer nutritionally vulnerable clients ▪ Provide nutritional assessment for high risk pregnant women including those with mental health issues ▪ Develop appropriate resource materials in areas such as diabetes education, obesity prevention and dyslipidemia ▪ Work with professional practice groups to establish standards for prevention and treatment of individuals with, or at risk for, diabetes, including, for example those taking the atypical anti-psychotics ▪ Work with pharmacists in developing tools about psychiatric medication side effects and dietary strategies to alleviate them ▪ Develop community resource listings for food sources e.g., Meals on Wheels, catering services providing home delivery, etc. ▪ Work with schools to promote healthy food selections ▪ Develop tools for discussing the safety of alternative and complementary therapies
Treatment strategies	
	▪ Counsel individuals and their families regarding eating disorders ▪ Provide weight management counseling for all ages to reduce risk of diabetes, hypertension and heart disease ▪ Provide case management expertise in coordinating treatment and services of multiple care providers to ensure continuity of care for clients ▪ Work with psychiatric professionals to establish nutrition interventions as part of the clinical guidelines for treatment of mental illnesses
Rehabilitative/supportive strategies	
	▪ Nutritional support for immunodeficiency disorders, dysphagia, developmentally disabled, those in prisons and those with mental illnesses in community psychiatric facilities
*Adapted from Table 1, The practice of registered dietitians in primary health care (20) **Ottawa Charter, 1986	

Recommendations

"When I do my education session with the dietetic intern class I provide them with a lot of information on the various anti-psychotics out there and the metabolic side effects…I emphasize to the students that they will be seeing these medications a lot, not just when working in a mental health area."

RD, Toolkit participant

The intent of this toolkit is to provide an in-depth understanding of primary mental health care and dietetics and outline opportunities for growth of the dietitian's role in mental health. Based on the review and consultation process, the following suggestions are made:

- *Dietetics Education.* There is a need to develop and implement content and/or field experience that addresses the nutrition needs of persons with mental health issues in undergraduate and graduate nutrition programs as well as dietetic internships. In particular, training in counseling – basic skills and therapeutic approaches (e.g., Cognitive-Behaviour Therapy, Motivational Interviewing, etc.) and education about the numerous nutrition-related side effects of psychiatric mediations should be incorporated into dietetics education. Training programs in technological advances that can be related to nutrition care (e.g., website development) may also be of benefit to dietitians to help develop tools for practice and resources for their clientele.

  There is also a need for interdisciplinary education on mental disorders and specifically the inter-relationship of mental illness and chronic disease (e.g., depression and diabetes). Finally, specialized inter-disciplinary nutrition training for practicing dietetics professionals to address the health care needs of these persons is also needed.

- *Advocacy*. Dietitians have a key role in advocating for mental health consumers. These can include strategies to improve food security, as well as development of practical food skills, such as cooking and growing food. In addition, nutrition labeling of foods to clearly indicate nutritional quality of ingredients in products is needed.

- *Food and Mental Health Related Policy and Practice.* The government as a whole, and all relevant agencies, should officially recognize the links between diet and mental health. Particular groups that are at increased risk of mental health problems should be provided with information about foods that promote their mental,

emotional and physical well-being. For example, general healthy eating campaigns should include mental health components. Government departments should review and improve food and nutrition standards for the mental health sector, and organizations that commission mental health services should include within their criteria food and nutrition standards for any services that provide food.

Finally, agricultural policy development should be informed by what is known of its nutritional impact and its subsequent effect upon mental health.

To promote the nutritional health of this population, it is recommended that policy decision-makers develop and apply appropriate population-based funding mechanisms to support primary health care nutrition services in mental health within their jurisdictions. In addition, they need to ensure effective monitoring and ongoing evaluation of primary health care nutrition services in mental health to ensure effectiveness and efficiency.

- *Development and monitoring of food and nutrition standards*. This is a need across the health and social care sector and should be incorporated into current performance assessment mechanisms. In addition, there is a need to have standards for nutritional interventions incorporated into treatment guidelines of psychiatric care.
- *Nutrition Education of Collaborators.* Opportunities for increasing the level of nutrition knowledge related to children and adults with mental health issues among all health care and human service providers should be sought.
- *Program Planning*. Dietitians need to support programs that promote health and wellness as an essential component of health care programs. We need to support the inclusion of nationally credentialed dietetics professionals experienced in the nutrition needs of persons with mental health issues in agencies developing policy in the areas of education, vocation, and health services at the federal and provincial levels. Furthermore, the participation of dietetics professionals on primary and

specialty care teams and in vocation, education, and residential programs that serve this population throughout the life cycle needs to be encouraged. Finally, all rehabilitative services (e.g., prisons, group homes) should incorporate food policies and practices so that all residents and staff are encouraged to choose culturally diverse and appropriate meals, snacks and drinks that promote their mental, emotional, and physical well-being.

- *Collaboration*. There is a need to collaborate with health care providers to ensure that there are policies in place to promote family-centered, interdisciplinary, coordinated, community-based, and culturally competent services. Suggestions to facilitate this include having more community internships in collaborative practice settings for dietitians in training (103). There is also an identified need to collaborate within our profession. This is encouraged through mechanisms such as the Mental Health and Eating Disorders Networks.
- *Accessibility*. Nutrition services need to be part of comprehensive health care for people with mental health needs. To enhance accessibility, strategies that include home visiting, training of paraprofessionals, peer workers, practicing in atypical sights such as drop-in centers and shelters, working non-business hours, and use of telemedicine need to be considered. In relationship to this, secondary mental health service staff should have ready access to registered dietitians for liaison and consultation.
- *Support Research*. Based on evidence-based research, there is a need to develop and implement protocols that address the unique nutritional needs of this population across the life cycle. We also need to obtain adequate data that characterizes dietitians working in mental health in order to initiate appropriate action. Cost-effectiveness studies are needed as are investigations using large national databases that can address new research questions. Furthermore, we need to support and promote nutrition research in the areas of obesity, diabetes mellitus, hypertension, cardiac, and other diseases as well as in the safety and efficacy of alternative therapies, in an

Based on a national DC survey:

- More than 77% of over 180 dietitians indicated that working in an interdisciplinary team was a "significantly to extremely positive" influence on their overall job satisfaction
- 96% of 169 responses indicate dietitians value a client-centered approach to care
- 82% of 143 responses indicated that dietitians value a population health approach to service

"There is an urgent need for policy-makers, practitioners, industry, service users and consumers to give proper credence to the role that nutrition plays in mental health."

Dr. Deborah Cornah, Consultant, Mental Health Foundation, 2006, (12)

effort to continuously improve the quality of life for those with mental health issues. Finally, research funding bodies should increase the grants available to investigate the relationship between diet and mental health.

- *Funding.* Lack of funding is identified as one of the many challenges identified in the implementation of primary health care principles (103). It is suggested that action be taken in the promotion of funding models that improve access to nutrition and mental health services.

Dietitians working in mental health can be catalysts for improved care of mental health clients and effective members of collaborative mental health care teams. Furthermore, they will continue to be valued as nutrition experts and enrich the lives of the individuals they work with(12).

Appendix A

The primary health care – Mental health and nutrition working group members, reviewers and contributors

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Carol Morgan. RD, Compass Group Canada, London ON

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Consumers
Members of the B.C. Mood Disorders Association and Schizophrenia Society

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Appendix B

CCMHI toolkit review questionnaire

The following questionnaire is intended to gather feedback about the toolkit(s) you are reviewing as well as provide information for the resource that will be developed specifically for dietitians. Please complete and email to kdavison@vivahealthed.com.

1. What is your educational background? (check all that apply)

❑ Dietetic Internship ❑ Master Degree ❑ Other (specify)

2. How many years have you practiced as a registered dietitian, in total? _____years

3. What type of mental health work do you practice? (check all that apply):

❑ Clinical Dietetics in a Psychiatric Hospital
❑ Clinical Dietetics that Includes Serving a Psychiatric Department
❑ Administrative Dietetics in a Psychiatric Hospital
❑ Administrative Dietetics that Includes Serving a Psychiatric Department
❑ Dietetics for One or More Community Psychiatric Facilities
❑ Dietetics in the Community Specifically Targeting Mental Health Clients
❑ Dietetics in the Community with Some Mental Health Clients
❑ Dietetics for a Mental Health Agency e.g., addictions
❑ Other _____

4. Which resource are you evaluating? (note: if you are evaluating more than one resource, please complete a separate questionnaire for each)

❑ Health Disparities among Aboriginal Peoples Toolkit
❑ Individuals with Substance Use Disorders Toolkit
❑ Child and Adolescent Toolkit
❑ Linking mental health and primary care services - A planning and implementation toolkit for health care providers
❑ Geriatric Mental Health Toolkit
❑ Toolkit for Urban Marginalized Community Members
❑ People with Serious Mental Illness Special Populations Toolkit
❑ Tookit for Rural and Isolated Populations
❑ Ethnocultural Issues Toolkit
❑ Working together towards recovery: Consumer, families, caregivers and providers Toolkit

5. Do you currently work in a primary health care context? You may want to refer to the DC document "The Role of the Registered Dietitian in Primary Health Care – A National Perspective" as background information to respond to this question.

❑ Yes
❑ No ⇒ go to question 7

6. If you answered yes to question 5, please describe the setting/program e.g., name of program, program's mandate including target audience, team members involved.

7. Does the particular resource/toolkit you examined help address the barriers to mental health care (i.e., accessibility, acceptability, availability)?

- ❑ Yes
- ❑ No

If no, please explain:

8. Is the particular resource/toolkit you examined consistent with consumer-focused planning, evaluation, governance of initiative and treatment decision-making processes?

- ❑ Yes
- ❑ No

If no, please explain:

9. Does the particular resource/toolkit you examined discuss the provision of nutrition services adequately as it pertains to mental health and the special population discussed in the toolkit you reviewed?

- ❑ Yes
- ❑ No

If no, please explain: (consider in your response to this question what you think would be the ideal that could achieved)

The following questions will help us to understand what are the most important factors involved in establishing and maintaining collaborative mental health care.

10. In what ways do you ensure that collaborative care services are accessible to people with mental health issues?

11. In what ways have you attempted to strengthen collaborative structures between primary care providers and the mental health team?

12. How do you ensure richness of collaboration between primary care providers and the mental health team?

13. How do you ensure that collaborative practices follow the principles of consumer centredness?

14. What unique planning, staffing, and implementation initiatives have you implemented (or are aware of) in order to promote collaborative care between primary care providers and the mental health team?

15. What attempts have you made to monitor and evaluate shared activities?

16. Do you have any further recommendations or comments related to the implementation and sustainability of collaborative care as it relates to mental health and nutrition services?

17. Are you aware of any primary care initiatives in mental health that include nutrition services?

- ❑ Yes
- ❑ No

If yes, please indicate the program:

Appendix C

Interview guide for mental health consumers and caregivers

1. Do you see a role for nutrition services in mental health? If yes, please explain.

2. Overall, how satisfied were you with any dietitian services you have been provided?

3. What did you take into account when deciding how satisfied you were with dietitian services you have been provided with?

4. What aspects of the dietitian services were of most benefit to you? Least benefit to you? Why?

5. When thinking about nutrition, what is most important to you?

6. Are there any improvements you would like to see in terms of dietitian services? If so, what are they?

Appendix D

CCMHI dietitian toolkit review questionnaire

The following questionnaire is intended to gather feedback about the draft toolkit, The Current and Potential Role of Dietitians in Collaborative Primary Health Care Mental Health Programs. Please complete and email to kdavison@vivahealthed.com.

Consultation process

Do you think that those chosen to be involved in the development of this toolkit provide adequate representation from all aspects of mental health care and dietetics?

- ❑ Yes
- ❑ No

If you answered no, whom else do you think should have been involved?

Definition of population

Do you think the population to which this toolkit addresses was adequately defined?

- ❑ Yes
- ❑ No

If you answered no, what groups should be included? Not included?

Do you think separate toolkit(s) should be developed for any particular subgroup discussed in this toolkit?

- ❑ Yes
- ❑ No

If yes, which subgroup(s) warrant a separate toolkit?

Issues in mental health

Do you think the literature pertaining to the significance of mental illness (e.g., section 4.1.1 of the toolkit) was adequately covered?

- ❑ Yes
- ❑ No

If you answered no, what other types of studies should be discussed?

Do you think that special populations of those who suffer from mental illness section (4.1.2) was adequately discussed?

- ❑ Yes
- ❑ No

If no, please explain:

Do you think the role of nutrition in mental health was discussed in sufficient detail?

- ❑ Yes
- ❑ No

If no, please explain:

Was anything missed in the discussion of the review process (section 4.2)?

- ❑ Yes
- ❑ No

If yes, what was missed?

Vision and goals of primary health care

Were issues regarding accessibility of dietitian services in mental health adequately addressed?

- ❑ Yes
- ❑ No

If no, please explain:

Were strategies for collaborative structures adequately discussed?

- ❑ Yes
- ❑ No

If no, please explain:

Were opportunities for richness of collaboration discussed in sufficient detail?

- ❑ Yes
- ❑ No

If no, please explain:

Were strategies for consumer centredness adequately outlined?

- ❑ Yes
- ❑ No

If no, please explain:

Important considerations in the development of mental health and nutrition initiatives

Were any relevant policies, legislation and regulations missed?

- ❑ Yes
- ❑ No

If yes, please explain:

Were issues and suggestions for funding adequately detailed?

- ❑ Yes
- ❑ No

If no, please explain:

Were issues and suggestions regarding evidence-based research adequately detailed?

- ❑ Yes
- ❑ No

If no, please explain:

Were the needs of communities adequately detailed?

- ❑ Yes
- ❑ No

If no, please explain:

Are there any other evaluative tools besides those listed in section 6.8 of the toolkit that should be included?

- ❑ Yes
- ❑ No

If yes, please provide details:

Collaborative models and initiatives

Are there any other collaborative initiatives pertaining to mental health and nutrition and primary health care that you are aware of that should be included in this toolkit?

- ❑ Yes
- ❑ No

If yes, please provide details (e.g., location, contacts):

Potential role of the registered dietitian

Was the potential role of the registered dietitian in primary mental health care adequately discussed?

- ❑ Yes
- ❑ No

If no, please provide details:

Additional Comments:

Appendix E

Selected resources relevant to primary health care, mental health and dietetics

The following is a listing of resources relevant to primary health care, mental health and dietetics.

Alternative and complementary therapies
Some resources that will help you learn about complementary therapies are:

www.ccmadoctors.ca
This is the website of the Canadian Complimentary Medicine Association website which is a network of physicians, residents and medical students who are dedicated to bringing together conventional and alternative medicine. The reader may also want to check out the US version www.nccam.nih.gov. It has a useful section dedicated to alternative therapies and mental health.

www.isom.org
The International Society for Orthomolecular Medicine website.

www.medicinechinese.com
This site lists practitioners of traditional Chinese medicine (TCM) and acupuncture in Canada, frequently asked questions, and tips on how to choose a credible practitioner. It also offers information on how to combine Western and Chinese medicine in a responsible manner.

Best practices
Centre for Addiction and Mental Health. *Best practices - Concurrent mental health and substance use disorders.* Ottawa, ON: Health Canada, 2002.

Health and Welfare Canada. *Guidelines for Comprehensive Services to Elderly Persons with Psychiatric Disorders.* Ottawa, ON: Health and Welfare Canada, 1988.

BC Ministry of Health Services. *Guidelines for Elderly Mental Health Care Planning for Best Practices for Health Authorities.* Victoria, BC: BC Ministry of Health Service, 2002.

Cost-effectiveness of nutrition services studies and resources
Anonymous. Effectiveness and Cost Effectiveness of Nutrition Care: a critical analysis with recommendations. *Journal of the American Dietetic Association* 1991:Suppl:S1-S50.

Brannon SD, Tershakovec AM, Shannon BM. The Cost-Effectiveness of Alternative Methods of Nutrition Education for Hypercholesterolemic Children. *American Journal of Public Health* 1997;87(12):1967-1970.

Delahanty LM, Sonnenberg LM, Hayden D, Nathan DM. Clinical and Cost Outcomes of Medical Nutrition Therapy for Hypercholesterolemia: A controlled trial. *Journal of the American Dietetic Association* 2001;101(9):1012-1016.

Franz MJ, Splett PL, Monk A, Barry B, McClain K, Weaver T, Upham P, Rergenstal R, Mazze RS. Cost-Effectiveness of Medical Nutrition Therapy Provided by Dietitians for Persons with Non-Insulin-Dependent Diabetes Mellitus. *Journal of the American Dietetic Association* 1995;95(9);1018-1024.

Hebert JR, Ebbeling CB, Ockene IS, Yunsheng MA, Riders L, Merriam PH, Ockene JK, Saperia GM. A Dietitian-Delivered Group Nutrition Program Leads to Reductions in Dietary Fat, Serum Cholesterol, and Body Weight: The Worcester Area Trial for Counseling in Hyperlipidemia (WATCH). *Journal of the American Dietetic Association* 1999;99:544-552.

Herman WH, Dasback EJ, Songer TJ, Eastman RC. The Cost-Effectiveness of Intensive Therapy for Diabetes Mellitus. *Endocrinology and Metabolism Clinics of North America* 1997;26(3):679-95.

Larson E. MNT: An Innovative Employee-Friendly Benefit That saves. *Journal of the American Dietetic Association* 2001;101(1):24-26.

Massachusetts Dietetic Association (1993). Nutrition Services Improve Health and Save Money. Evidence from Massachusetts. This resource contains outcome documentation worksheets for determining cost-effectiveness of nutrition services.

Pavlovich WD, Waters H, Weller W, Bass DB. Systematic Review of Literature on the Cost-Effectiveness of Nutrition Services. *Journal of the American Dietetic Association* 2004;104(2); 226-232.

Position of The American Dietetic Association: Cost-Effectiveness of Medical Nutrition Therapy. *Journal of the American Dietetic Association* 1997;95(1): 88-91.

Pritchard DA, Hyndman J, Taba F. Nutritional Counseling in General Practice: a cost effective analysis. *Journal of Epidemiology and Community Health* 1999;53(5);311-6.

Sheils JF, Rubin R, Stapleton DC. The Estimated Costs and Savings of Medical Nutrition Therapy: The Medicare population. *Journal of the American Dietetic Association* 1999;99(4): 428-435.

Critical appraisal tools for evaluating the research literature

Law M, Stewart D, Pollock N, Letts L, Bosch J, and Westmorland M. *Critical Review Form - Quantitative Studies.* Hamilton, ON: McMaster University, 1998.

Law C, Stewart D, Pollock N, Letts L, Bosch J, and Westmorland M. *Guidelines for Critical Review Form - Qualitative Studies*. Hamilton, ON: McMaster University, 1998.

The Canadian Task Force on Preventive Health Care. *Evidence-Based Clinical Prevention*. Ottawa, ON: The Canadian Task Force on Preventive Health Care; 2006.

Mental health resources

www.autismsocietycanada.ca
This is the site of the Autism Society of Canada and it includes a professional resources link providing resources related to best practice.

www.cmha.ca(bilingual)
This is the site of the Canadian Mental Health Association and it includes policy papers on the need for affordable housing, employment, homecare and other relevant topics for people living with a mental illness. It also lists a CMHA in your area and provides information on how to contact them.

www.camh.net/about_addiction_mental_health
Web site of the Centre for Addiction and Mental Health in Toronto and offers numerous fact sheets on mental disorders and addiction – most have been translated into many languages. Has online catalogue of resources.

www.mooddisorderscanada.ca(Babel Fish Translator on site)
This is the site of the Mood Disorders Society of Canada and offers the latest policy papers and Canadian surveys, links to local self-help resources and many fact sheets on mood disorders and other mental illnesses.

www.schizophrenia.ca (bilingual)
The Schizophrenia Society of Canada's site offers an array of detailed information on schizophrenia but also many other mental disorders. It reviews current research, and publishes policy papers.

The Standing Senate Committee on Social Affairs, Science and Technology (2004). Interim Report on Mental Health, Mental Illness and Addiction. Report 3: Mental Health, Mental Illness And Addiction: Issues And Options For Canada available at: www.parl.gc.ca/38/1/parlbus/commbus/senate/com-e/soci-e/rep-e/repintnov04-e.htm

Zeanah C. *The Handbook of Infant Mental Health*, Second Edition. The Guilford Press: New York, 2000.

Nutrition resources for professionals and consumers

The British Columbia Schizophrenia Society website - www.bcss.org
The British Columbia Schizophrenia Society has fact sheets on schizophrenia including the topic of nutrition.

Bergen M. *Up Recipes For Down Times Cookbook*. Contact the Mood Disorders Association of British Columbia, Mood Disorders Association of BC, email: mdabc@telus.net for further details to order.

Davison K. Nutrition and Mood Disorders - Powerpoint Presentation. This presentation with accompanying handout is targeted to consumers with Mood Disorders. For further details email: kdavison@vivahealthed.com.

Davison K. Eating Disorders and Diabetes - Powerpoint Presentation. This presentation is targeted to health professionals. For further details email: kdavison@vivahealthed.com.

Davidson B, Brauer P. (2005). *Nutrition in Primary Health – Dietitian Evaluation – Data Collection Form*. Located at: www.dietitians.ca.

Dekker T (2000). *Nutrition and Recovery: A Professional Resource for Healthy Eating during Recovery from Substance Abuse*. Available through the Centre for Addiction and Mental Health (CAMH) website: www.camh.net.

Dougherty K, Oszadszky I. Bridging the Gap: Dietitian/Nutritionists and Counsellors Working Together in the Prevention and Intervention of Disordered Eating Powerpoint Presentation. This presentation outlines a partnership model for disordered eating and provides an overview of "Defining Me: Developing a Healthy Body Image and Lifestyle" group.

Kaplan B. Micronutrient Supplementation & the Treatment of Mood & Behaviour Problems - Powerpoint Presentation. This presentation is targeted to health professionals. For further details email: Bonnie.Kaplan@CalgaryHealthRegion.ca. A summary of this presentation is also located on the DC Mental Health Network website.

Dietitians of Canada Mental Health Network. *Potential Role for the Dietitian in Community Support for the Severely Mentally Ill*. Toronto, ON: Dietitians of Canada, 1998.

Hamilton Health Services Organization, Mental Health Nutrition Program
They have over 70 educational resources, some specific to mental health. Contact Tracy Hussey, Nutrition Coordinator, Hamilton HSO Nutrition Program.

Kellor C. Nutrition and Recovery. Developments 18 (1). Located at:
corp.aadac.com/developments/dev_news_vol18_issue1.asp

Mental Health Foundation. *Feeding Minds: The impact of food on mental health*. London, England: Mental Health Foundation, 2006.

Seale J, Willows L. The MAOI Diet. Located on the DC Mental Health Network website: www.dietitians.ca.

Stoll A. *The Omega-3 Connection: The Groundbreaking Anti-depression Diet and Brain Program.* New York: Simon and Schuster, 2001. Written by a psychiatrist, this book highlights the importance of the omega-3 fatty acids in mental health and contains diet ideas and recipes.

Van de Weyer. *Changing Diets, Changing Minds: how food affects mental well being and behaviour.* London: Mental Health Foundation, 2005.

Willows L (2005). *Mental Health Introductory Reading List*. Located on the DC Mental Health Network website: www.dietitians.ca.

Primary health care

CCHMI web site at www.ccmhi.ca (English) or www.iccsm.ca (French).

National Primary Health Care Conference. *A Thousand Points of Light? Moving Forward on Primary Health Care*. Winnipeg: NPHCC, 2004.

Canadian Health Services Research Foundation (CHSRF). *Choices for Change: The Path for Restructuring Primary Healthcare Services in Canada*. Ottawa: CHSRF, 2003.

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