Dietitians of Canada
Les diététistes du Canada

The Role of the Registered Dietitian in Primary Health Care

- A National Perspective -

Executive Summary

The new view of health care demands a balanced allocation of funds and resources for the entire health care continuum. There is wide recognition of the need to place a greater emphasis on Primary Health Care (PHC) and wellness promotion, rather than the past focus on illness and treatment (Fyke, 2001; Health Canada, 1997; OHSRC, 1999).

Nutrition is an acknowledged factor in promoting and maintaining health (Evans, Barer & Marmor, 1994; Health Canada, 1994; ADA, 1998; Health Canada, 1996), yet there is limited and inequitable access by the public to community-based primary health care nutrition services across Canada. To address this concern, and to ensure that dietitians are integral members of the interdisciplinary team of care providers, specific actions by planners and policy makers are needed. This document describes:

- The concept and key features of Primary Health Care[1]
- The practice provided by Registered Dietitians in PHC
- Issues to be addressed for the integration of Registered Dietitians into the PHC continuum
- Scenarios that illustrate the potential role and impact of the Registered Dietitian in a PHC setting

Dietitians 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 lifecycle. Dietitians are educated in the science and management of nutrition and dietetics. They bring evidence-based decision-making to their practice and adhere to nationally established standards of practice, monitored by provincial regulatory bodies.

Dietitians utilize health promotion, disease prevention and treatment strategies that support communities and individuals to make healthy eating and active living choices. These strategies are well recognized as important in reducing the incidence of chronic illness and reducing health care costs (ADA, 1998; ADA,

[1] Although a number of definitions of PHC exist, probably the best recognized is that of the World Health Organization in the 1978 Alma Ata Declaration: "*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 element 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).*"

1995;City of Toronto, 1997; Higgins et al, 1989; INFACT Canada, 1998; NCIC, 2000).

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 Dietitians of Canada that policy decision-makers:

- establish long-range plans that ensure nutrition services match the demonstrated nutrition needs of communities,

- develop and apply appropriate population-based funding mechanisms to support PHC nutrition services within their jurisdictions,

- establish effective systems to integrate nutrition services into PHC, and

- ensure effective monitoring and ongoing evaluation of PHC nutrition services to ensure effectiveness and efficiency.

Introduction

The new view of health care demands a balanced allocation of funds and resources for the entire health care continuum. There is wide recognition of the need to place a greater emphasis on Primary Health Care (PHC) and wellness promotion, rather than the past focus on illness and treatment (Fyke, 2001; Health Canada, 1997; OHSRC, 1999).

Nutrition is an acknowledged factor in promoting and maintaining health (Evans, Barer & Marmor, 1994; Health Canada, 1994; ADA, 1998; Health Canada, 1996), yet there is limited and inequitable access by the public to community-based, primary health care nutrition services across Canada. This document focuses on the important leadership role in PHC that is played by the community-based Registered Dietitian[2,3], through health promotion, disease prevention, treatment, support and rehabilitation. It positions dietitians as integral members of the interdisciplinary team of care providers working in PHC. The document will describe:

- The concept and key features of Primary Health Care
- The practice of Registered Dietitians in PHC
- Issues to be addressed for the integration of Registered Dietitians into the PHC continuum
- Example scenarios that illustrate the potential role and impact of the Registered Dietitian in a PHC setting

Primary Health Care - The Concept

Although a number of definitions of PHC exist, probably the best recognized is that of the World Health Organization in the 1978 Alma Ata Declaration:

"*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 element 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)."*

[2] The term "Dietitian" or "Registered Dietitian" is used throughout this document for consistency. In some settings, other position titles may be utilized (i.e. Public Health Nutritionist, Community Dietitian, Community Health Nutritionist, etc.)

[3] While acknowledging the integral role of Registered Dietitians in secondary and tertiary health care, those facets of dietetic practice are beyond the scope of this document.

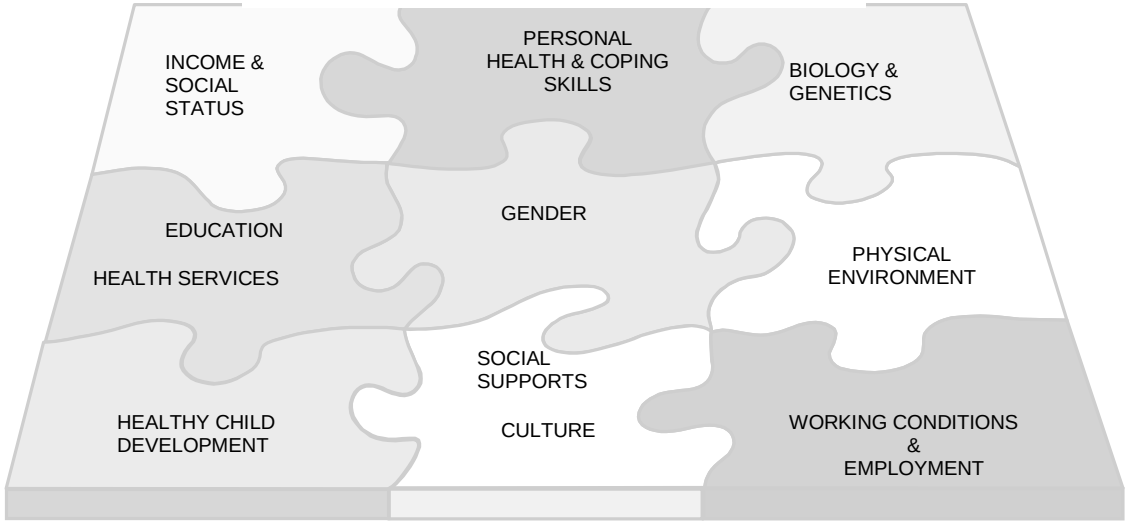
Key Elements of Primary Health Care

Numerous models for a reformed primary health care system have been proposed. Dietitians of Canada endorses the following principles for reform, which are also supported by many other key organizations (F/T/P Advisory Committee on Health Human Resources, 2000; Wanke, Saunders, Pong & Church, 1995; Shoultz and Hatcher, 1997)

1. Application of a population health approach (Young, 1998; Sollner & Lessof, 1998) that differs from traditional medical and health care thinking in four main ways:

    - PHC addresses all the factors that impact on health – not just health services - and utilizes a variety of strategies to address these determinants. Collectively these factors are often called determinants of health (Health Canada, 1994). Figure 1 illustrates that these determinants are inter-related. Their complex interactions have an even greater impact on health than any one factor alone.

Figure 1
HEALTH DETERMINANTS



- In addressing health determinants, PHC links with other relevant sectors such as schools, childcare facilities, justice, housing, private sector, recreation, environmental groups, family support services, churches and other non-government and volunteer organizations.

- PHC employs strategies that are designed to affect the entire population, as well as those that impact on individuals who have health problems, or are at risk for developing them.

- PHC involves the community in identifying health needs and building capacity within the community to address those needs.

2. Access to a comprehensive scope of PHC services, through the most appropriate provider of those services. The scope of PHC services includes health promotion, illness prevention, education and support for self-care, diagnostic services and treatment of episodic and chronic illness and injuries, primary reproductive care, palliative care, primary mental health care, coordination and provision of rehabilitation services, co-ordination of, and referral to, other health care services, supportive care at home and in long-term care facilities.

3. Coordination and continuity between providers, throughout the lifecycle and across all sectors that impact on health. Information technology can be a facilitating factor to achieve efficiency and effectiveness in accessing, sharing and coordinating health information with authorized providers of services.

4. Interdisciplinary group practices comprised of a mix of health service providers based on community needs. Team-based delivery of primary health care is recognized around the world as the most effective way to deliver everyday health services (Fyke, 2001). Recent evaluation of PHC demonstration projects indicates that collaborative group practices facilitate consultation, case management, coordination and continuity of care, as well as improved consumer satisfaction (Howard Research, 2000). It has also been suggested that interdisciplinary team-based PHC is more efficient and cost-effective than that of a solo practitioner (F/P/T Advisory Committee, 2000; Mirkin, Parke & Grignon, 1999).

5. Affordability and cost-effectiveness[4] – The National Forum on Health (Health Canada, 1997) emphasized the importance of developing a PHC system that was integrated, responsive and cost-effective in addressing the health care needs of Canadians. A Health Transition Fund was established by the federal government to support PHC demonstration projects across the nation (Health Canada, 1997a). Evaluation of outcomes and cost-effectiveness was a key requirement for funding. While several models have been considered in demonstration projects, a major focus has been on population-based, rather than fee-for-service, funding. This is seen as one means of containing rising health care costs (F/P/T Advisory Committee, 2000).

In summary, the premise of PHC is that responsibility for the health of the community and its members is shared among communities, citizens and providers. PHC includes a full range of health promotion approaches and programs, a full range of clinical services *and* a wide variety of structural and systemic arrangements designed to facilitate community participation. The thread which knits all these services, programs, initiatives and supports together

[4] Cost-effectiveness is defined as better health at lower cost (Howard Research, 2000).

is a common focus on health as “capacity,” rather than a focus on illness and deficit (MacKinnon et. al., 1998).

The Practice of Registered Dietitians in Primary Health Care

Dietitians are health professionals who are uniquely trained to advise on diet, food and nutrition. For any nutrition-related health issue there is a spectrum of actions that dietitians can take to address the problem – health promotion and illness prevention strategies (targeting populations, groups and individuals), as well as specialized nutrition therapy and rehabilitation / support strategies to address specific nutrition-related illnesses.

Depending on the practice setting, dietitians may be responsible for a wide range of services (e.g. community health centres, public health), or may have a specific focus of responsibility (e.g. home care, clinical practice). Through their comprehensive knowledge of nutrition, food science and management of nutrition programs and services, dietitians bring the following perspectives and skills to primary health care (IHHRD, 1996):

- Dietitians translate the science of nutrition into practical information that supports people in making healthy food choices throughout the lifecycle.

- Dietitians bring evidence-based decision-making to their practice and adhere to nationally established standards of practice, monitored by provincial regulatory bodies.

- Dietitians are skilled at working with communities to identify capacities and facilitate community skill-building, health advocacy and social action.

- Dietitians reinforce community action and development by building partnerships and applying strong communication, negotiation and problem-solving skills to address nutrition and health-related issues.

- Dietitians apply their knowledge of health determinants, working with communities, groups and individual clients to plan the best approach to overcoming barriers to health.

- Dietitians are skilled educators in promoting behaviour change relative to food choices, eating behaviour and preparation methods to optimize health.

- Dietitians develop plans based on a comprehensive needs assessment. They monitor progress, provide the needed ongoing supports and evaluate outcomes.

- Dietitians promote client independence and autonomy in decision-making and build capacity for the client to achieve health.

- Dietitians' research skills are an asset in developing the knowledge base necessary for defining community health indicators and measuring impact of PHC interventions.

Table 1 which follows provides specific examples of how the practice of dietetics, within the primary health care context, contributes to the enhancement and/or maintenance of the quality of life for community members, improves health outcomes, and reduces or contains overall health costs. These examples are not intended as an *inclusive* array of services, but are *illustrative* of the range in dietetic practice.

Table 1

The Practice of Registered Dietitians in Primary Health Care

STRATEGIES	ACTIONS
Health Promotion Strategies (Ottawa Charter, 1986)	**Examples of Actions (not all-inclusive)**
Build healthy public policy – health is on the agenda of policy makers in all sectors and at all levels influencing policy decisions that impact on health	❖ 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 ❖ Consult with government in setting food assistance rates to ensure those on social assistance have sufficient resources to purchase a healthy diet ❖ Conduct research on the nutritional intake of populations to inform policy development on food fortification and food guidance systems ❖ Provide consultation and feedback on proposed national nutrition labelling policies ❖ Participate on scientific committees to establish nutrient requirements of populations
Create supportive environments – work and leisure conditions support healthy choices	❖ Consult with workplace food service to suggest healthy options on the menu ❖ Assist communities to establish community kitchens, buying clubs, community gardens to promote lower cost healthy eating, food safety and peer support for low income populations ❖ Consult with community-based congregate meal programs in seniors' centres to ensure access to a variety of healthy choices ❖ Work with grocery retailers to develop "senior friendly" shopping facilities that help maintain the independence of older citizens to do their own food purchasing
Strengthen community action – communities are supported with access to information, learning opportunities and funding	❖ Conduct food safety seminars with volunteer organizations that provide community catering, thereby reducing incidence of food-borne illness ❖ 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 ❖ Manage and train peer support workers in programs targeting vulnerable populations such as pregnant teens; First Nations

Table 1 (continued)

	people, seniors
Develop personal skills – opportunities are available to increase knowledge and skills that lead to health-enhancing choices	❖ Conduct supermarket tours on reading labels to teach shoppers how to make healthy choices at the point of purchase ❖ Provide basic skills training for independent living to group homes for the developmentally challenged ❖ Consult with new parents to address infant and toddler feeding concerns ❖ 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 – there is recognition and focus on the broad determinants of health, enabling communities and citizens to take more control over their health	❖ Facilitate networks and referrals between dietitians & other health providers working in primary health care settings 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, alternative health services ❖ Train other providers (e.g. physicians, nurses, peer workers) and professionals in other sectors (e.g. social services, teachers, recreation and fitness leaders) to extend – not replace – dietitians' expertise ❖ Lead demonstration projects to provide evidence of effectiveness of dietitians' services as a component of interdisciplinary health care
Illness Prevention Strategies	**Examples of Action (not all-inclusive)**
	❖ Train home care workers in nutritional risk identification to identify and refer nutritionally vulnerable clients ❖ Provide nutritional assessment and counselling for high risk pregnant women (e.g. teens, vegetarians, low income persons) to reduce incidence of low birth weight ❖ Develop educational resource materials to assist individuals with elevated blood lipids to select lower fat foods ❖ Provide counselling on dietary modification and active living for women with gestational diabetes or hypertension to promote maternal health and healthy infants ❖ Work with professional practice groups to establish standards for prevention and treatment of individuals with, or at risk for, diabetes
Treatment Strategies	**Examples of Action (not all-inclusive)**
	❖ Counsel individuals and their families regarding eating disorders such as anorexia and/or bulimia ❖ Provide weight management counselling for all ages to reduce risk of diabetes, hypertension and heart disease ❖ Provide counselling to individuals with diabetes and their families, to promote healthy eating and reduce incidence of complications ❖ Provide case management expertise in coordinating treatment and services of multiple care providers to ensure continuity of care for clients

Table 1 (continued)

Rehabilitative / Supportive Strategies	Examples of Action (not all-inclusive)
	Nutritional support for: ❖ Immunodeficiency disorders to optimize nutrition status and prevent infection and/or weight loss ❖ Palliative care ❖ Trauma ❖ Dysphagia ❖ Home total parental nutrition ❖ Developmentally disabled

Issues to be Addressed for the Integration of Registered Dietitians within the Primary Health Care System

Accessibility to PHC Nutrition Services

Timely and direct access to a comprehensive range of PHC services by the appropriate provider, are key elements of PHC, and are desired features of health care identified by the community. In a recent survey conducted on the paediatric nutrition needs of a sample of Calgary residents, the most important elements of service noted were access to a Registered Dietitian, client-centred and integrated services (Watson-Jarvis, 2000).

While Registered Dietitians work in a variety of PHC settings, including community health centres, public health, home care, ambulatory / primary care clinics and consulting / private practice, access to these services by the community, individuals and groups is widely variable across Canada due to two factors - inadequate numbers of nutrition practitioners proportionate to community needs and lack of population needs-based funding mechanisms to support access to nutrition services.

Inadequate Numbers of Nutrition Practitioners – The number of dietitians required to address the unmet need for nutrition services is unknown and will require additional work to define. Substantial experience has already been gained, however, from pilot projects and programs in several provinces. As a beginning point, it has been recommended that population-health strategies require a minimum ratio for public health nutrition positions of 1:50,000 population (Health Canada, 1990). Staffing patterns are dependent upon (Dodds & Kaufman, 1991):

- program objectives,
- demographic characteristics of the community,
- socio-economic and health status,
- availability of nutrition services provided by other health and social services agencies,
- jurisdictional area,
- geographical and language barriers,
- dispersement of the population, and
- climate.

The latest population health projections on the alarming increase in incidence of diabetes suggest that better population health strategies are needed if we are to

avoid a nation-wide epidemic of diabetes (Health Canada, 1999). Furthermore, eight of the ten leading causes of death, including coronary heart disease, stroke, diabetes and some types of cancer are related to diet and alcohol (US DHHS, 1998). The United States Surgeon General has stated, "If you are among the two out of three Americans who do not smoke or drink excessively, your choice of diet can influence your long-term health prospects more than any other action you might take (US DHHS, 1998)." Promotion of healthy eating and achievement and maintenance of healthy weight are the cornerstones of population health promotion / disease prevention strategies for these conditions. ***Adequate numbers of Registered Dietitians, working as members of the interdisciplinary PHC team, are needed to effectively implement these strategies*.**

Funding – In the absence of consistent funding mechanisms to support nutrition services in PHC, services have been developed in an ad hoc manner by various agencies with differing mandates. In some communities, previously available ambulatory care services operated through community hospitals have been closed, thereby eliminating access to nutrition services by primary care physicians. Other agencies may have been able to retain dietitian services, but in many cases the mandate of those dietitians is focused specifically on meeting the needs of those agencies, rather than allowing access to the community at large.

Dietitians in private practice have also provided services to support dietary change for those individuals with specific health risks and with the financial resources to pay for services from their own pockets or with the support of supplementary health insurance.

The lack of population needs-based funding has created inequitable access to required nutrition services, in spite of repeated demonstration of the cost effectiveness of nutrition services. Several examples of the cost-effectiveness of nutrition services follow.

<u>Affordability and cost-effectiveness</u>

Nutrition services, provided by a registered dietitian, are an important factor in reducing the cost of health care overall (ADA, 1995). Population health promotion strategies that promote healthy eating and active living help to reduce the incidence of chronic illnesses. Among the health conditions most impacted by nutrition intervention is the reduction in low birth rate caused by low gestational weight gain. The City of Toronto's Healthiest Babies Possible program has prevented an average of 30 Low Birth Weights (LBWs) per year since 1987, for a saving of $6 million annually (City of Toronto, 1997). The annual cost of the program is $300,000, $10,000 of which is for the food supplementation component. The entire program provides a 20:1 ratio of health care cost savings to program expenditures. The Montreal Diet Dispensary, whose programs also target low-income pregnant mothers at risk, has saved an estimated $41 million annually in treatment for LBW babies (Higgins et al, 1989). Other prenatal programs like the Canada Prenatal Nutrition Program and Healthiest Babies Possible in Ontario, have also proven effective in reducing the risk of LBW and avoiding medical care costs for both mothers and infants when dietitians were involved (DC, 1999).

Gestational diabetes, a condition occurring during pregnancy, if not treated effectively, can result in a large baby, complicated delivery, neonatal complications and higher health care costs. Appropriate diet, the first line of treatment in controlling blood glucose levels, may be all that is required to ensure a positive pregnancy outcome (ADA, 1995).

Epidemiological data provide evidence of savings to the health care system through encouraging Canadian mothers to breast feed (INFACT Canada, 1998). It is estimated that over $3 million would be saved on hospital costs for infants aged 0-12 months for respiratory illnesses and another $58 million would be saved through a 50% reduction in hospital admissions and antibiotics for infants with otitis media. Furthermore, breastfeeding has been associated with a reduced incidence of adult-onset diabetes in certain population groups (INFACT Canada, 1998). The true benefits of breastfeeding, however, cannot be measured in dollars and cents. There are profound societal benefits from a population of healthy, well-nourished children with enhanced competency, coping skills and IQ, reducing the need for social support structures. Breastfeeding also puts more money in the hands of low income families, allowing the redirection of limited dollars from infant formula to purchasing healthy foods for the mother and other family members (INFACT Canada, 1998).

Cancer is the leading cause of premature death in Canada, with almost one third of all potential years of life lost (NCIC, 2000). More than $104 billion US is attributed for cancer treatment, lost productivity and mortality costs and one third of the 500,000 annual deaths from cancer are associated with undesirable dietary practices. Population health strategies that promote lower fat consumption, increased dietary fibre and generous intake of fruits and vegetables are important in reducing cancer risk (CCS, undated).

Obesity is another major health problem in North America, with the incidence of childhood obesity on the rise (Tremblay and Willms, 1998). Obesity is associated with increased risk for diabetes, hypertension, cardiovascular disease, stroke, gout, sleep apnea and osteoarthritis (F/P/T AC, 1999; NIH, 1998; WHO, 1998). In Canada, the cost of treating diabetes and its complications ranges from 5-10 billion dollars annually in direct and indirect health care costs (Health Canada, 1999). Approximately $33 billion is spent by Americans annually on ineffective fad diets and weight loss gimmicks to control obesity (ADA, 1997). Canadian data indicate similar trends (Birmingham et al, 1999).

For the increasing population of seniors, 85% have one or more chronic conditions, including osteoporosis, diabetes, hypertension and heart disease, all of which can benefit from nutrition intervention (ADA, 1998; Campbell et al, 1999; Health Canada, 2000). For cardiovascular disease alone, approximately 6.5 million patient days in hospital and 26 million patient visits to physicians are related to heart disease (H&SFC, 1997). Furthermore, 39 percent of patients who received nutrition counselling for hypertension were able to remain off hypertension medication, even after 4 years (Stamler et al, 1987).

Nutrition screening, assessment and treatment are key factors to help maintain the health, independence and quality of life of all Canadians and reduce costs of institutionalization.

In summary, numerous demonstrations of the cost-effectiveness of nutrition services support our position of the need for population needs-based funding to support nutrition services in PHC.

Coordination and Continuity of PHC Services

Continuity in care can be achieved by creating an integrated system of service delivery, supported through collaborative planning processes. The required systems must include health providers, inter-agency and cross-sectoral partnerships and consultation with stakeholder groups (Howard Research, 2000a).

With continuity and coordination of services as goals, not all nutrition services need to be provided to a community by the same dietitian working in the same practice setting as other PHC providers. An effective networking and referral system that links dietitians and other care providers, working in a variety of community-based settings, and from a variety of human services sectors, would substantially improve continuity of care for clients. Limitations in the scope of practice of one practitioner can be offset through linkage with dietitians with different mandates. Information technology already exists to facilitate this, but leadership from government is required for funding, technical support and standardization of electronic systems.

Table 2 illustrates how an effective referral network of dietitians, from a variety of community-based settings, can provide complimentary services that "deliver" the key elements of PHC. ***The proviso of such a networked system, however, is that there be sufficient human resources in each setting to provide the level of care needed by the population to be served.***

TABLE 2 – Dietetics Practice – A Complementary Network of Services Relative to Key Elements of Primary Health Care

DIETETIC PRACTICE SETTINGS[5]	KEY ELEMENTS OF PRIMARY HEALTH CARE				
	Provides a Range of Comprehensive PHC Nutrition Services	**Utilizes Population Health Strategies**	**Ensures Continuity & Co-ordination of Care Across the Lifecycle, Between Providers & Across All Sectors**	**Applies Interdisciplinary Practice & Team Relationships**	**Is Affordable & Cost Effective[6]**
Community Health Centre (CHC) model with Registered Dietitian as a salaried member of the interdisciplinary team (6%)[7]	√	√	√	√	√
Public Health (26%)	Focus is on population health promotion and disease prevention	√	√	√	√
Home Care (20%)	Focus is on services for specific clients at risk or with existing medical conditions	Focus is on services for specific clients at risk or with existing medical conditions	√	√	√
Ambulatory / Primary Care Practice (15%)	Focus is on services for specific clients at risk or with existing medical conditions	Focus is on services for specific clients at risk or with existing medical conditions	√	√	√ Dependent upon funding model
Consulting / Private Practice (33%)	√	Primary focus is on individuals and groups, rather than population	√ Dietitian maintains own client record and liaises with other care providers as needed	√	√ Fee for service is a barrier to some clients

[5] While the range of services varies between individual practitioners, information is based on the usual mandate for these practice settings.
[6] The *potential* for savings relative to decreased hospitalization and long-term disability as a result of nutrition intervention has been well documented (ADA, 1995).
[7] % of dietitians in each practice setting is an approximation based on the DC's Skills and Practice Registry relative to the number of DC members working in a PHC setting (N=1390)

Conclusions and Recommendations

This document focuses on the Registered Dietitian as an integral member of the interdisciplinary team of care providers working in PHC. Dietitians play a leadership role on this team in supporting the nutritional health of the population through health promotion, disease prevention, treatment, support and rehabilitation.

Currently there is limited and inequitable access to a comprehensive scope of PHC nutrition services across Canada. 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 Dietitians of Canada that policy decision-makers:

- establish long-range plans that ensure nutrition services match PHC needs of communities,
- develop and apply appropriate population needs-based funding mechanisms to support PHC nutrition services within their jurisdictions,
- establish effective systems to integrate nutrition services into PHC, and
- ensure effective monitoring and ongoing evaluation of PHC nutrition services to ensure effectiveness and efficiency.

References

American Dietetic Association. The Role of Nutrition in Health Promotion and Disease Prevention Programs – Position of ADA. *JADA* 1998; 98:205-208. http://www.eatright.com/adap0298b.html

American Dietetic Association. Weight Management – Position of ADA. *JADA* 1997;97: 71-74. http://eatright.com/adap0197.html

American Dietetic Association. Cost-effectiveness of Medical Nutrition Therapy – Position of the American Dietetic Association. *JADA* 1995;95:88-91. http://www.eatright.com/acost-effectivenss.html

Birmingham, CL, Muller, J, Palepu, A, Spinelli, JJ, Anis, AH. The Cost of Obesity in Canada. *CMAJ* 1999; 160(4): 483-488. http://www.cma.ca/cmaj/index.htm

Campbell, NRC, Burgess, Bernard, CK, Choi, TG, Wilson, E, Cleoux, J, Fodor, G, Lieter, L and Spence, D. Lifestyle Modifications to Prevent and Control Hypertension. Methods and an Overview of the Recommendations. *Can. Med. Assoc. J*. 1999: 160(9Suppl):S1-S6. http://www.cma.ca/cmaj/index.htm

Canadian Cancer Society. *Eating For the Good of Your Health – Tips to Reduce Your Cancer Risk*. CCS Publication. Undated. http://www.cancer.ca/info/pubs/211937e1.htm

City of Toronto. *If the Health Care System Believed "You Are What You Eat": Strategies to Integrate Our Food and Health Systems*. Toronto Food Policy Council Discussion paper Series. Paper #3. Toronto, Ontario. October, 1997.

Dietitians of Canada. Community Dietitians In Health Centres Network. *Community Dietitians Make a Difference. Make Sure There is a Dietitian On Your Team!* Toronto. 1999. http://www.dietitians.ca/diet/pdf/community_dietitians.pdf

Dietitians of Canada. *Position Development Guidelines*. Toronto, 2001. http://www.dietitians.ca/diet/pdf/DC_position_development.pdf

Dodds, JM and Kaufman, M (Ed.). *Nutrition in Public Health*. Aspen Publishers Inc.1991.

Evans, RG, Barer, ML and Marmor, TR. *Why Are Some People Healthy and Others Not? The Determinants of Health of Populations*. New York. Aldine de Gruyter. 1994.

F/P/T Advisory Committee on Health Human Resources. *A Background Paper on Primary Health Care Reform*. Ottawa. June 2000.

F/P/T Advisory Committee on Population Health. *Statistical Report on the Health of Canadians*. Chapters 67 and 68. Ottawa. 1999.

F/P/T Advisory Committee on Health Services. *The Victoria Report – A Model for the Reorganization of Primary Care and the Introduction of Population-Based Funding*. Ottawa. 1995.

Fyke, K. *Caring for Medicare - Sustaining a Quality System*. Commission on Medicare. Regina, Saskatchewan, 2001. http://www.medicare-commission.com/

Health Canada. *Canada Health Action: Building on the Legacy*. Publications of the National Forum on Health. Volume I. Final Report, 1997. http://www.hc-sc.gc.ca/english/forum_e.htm

Health Canada. *Communication Implementation Committee of Canada's Guidelines to Healthy Eating*. Nutrition Programs Unit. Ottawa. 1990.

Health Canada. *Diabetes in Canada. Minister of Public Works and Government* Services. Ottawa. 1999. http://www.hc-sc.gc.ca/hpb/lcdc/publicat/diabet99.

Health Canada. Health Transition Fund. Ottawa. 1997a. hppt://www.hc-sc.gc.ca/htf-fass/english/whatwedo_e.htm

Health Canada. *National High Blood Pressure Prevention and Control Strategy. Report of the Expert Working Group*. Ottawa. 2000. http://www.hc-sc.gc.ca/hpb/lcdc/bcrdd/hyperten/strate.pdf

Health Canada. *Nutrition: An Agenda For Action*. Ottawa. 1996. http://www.hc-sc.gc.ca/hppb/nutrition/pube/action/agenda/html.

Health Canada. *Strategies for Population Health: Investing in the Health of Canadians. The Federal, Provincial and Territorial Advisory Committee on Population Health for the Meeting of the Ministers of Health*. Ottawa. 1994. http://www.hc-sc.gc.ca/hppb/phdd/implement/e_linked.html

Health Canada. Towards A Common Understanding: Clarifying the Core Concepts of Population Health. A Discussion Paper. Ottawa. December, 1996. http://www.hc-sc.gc.ca/hppb/phdd/docs/common/index.html

Heart and Stroke Foundation of Canada. *Heart Disease and Stroke in Canada*. Ottawa.1997. http://www.hc-sc.gc.ca/hpb/lcdc/bcrdd/hdsc97/index.html

Higgins, AC et al. Impact of the Higgins Nutrition Intervention Program on Birth Weight: A Within-Mother Analysis. *JADA* 89;(8):1097-1103.

Howard Research and Instructional Systems Inc. *Alberta Health Care Project. Six National Dimensions of Inquiry.* Monograph. Alberta Health. September 2000.

INFACT Canada. *Breastfeeding Saves Billions of Health Care Dollars*. News Release. 1998.

Integrated Health Human Resources Development. *Competencies for Primary Health Care Practitioners in Canada*. 1996.

MacKinnon, C, Anderson, B, Crossman, D, Dufton, B, Devine, H and Cheney, M *Primary Health in the Western Region. From Mission to Practice.* Nova Scotia, 1998.

Mirkin, D, Parke, R & Grignon, R. *Proposed Inter-professional Primary Health Care Groups (PCGs) Costing Models.* December, 1999.

National Cancer Institute of Canada. *Canadian Cancer Statistics,* 2000. Toronto, Canada, 2000. http://www.cancer.ca/indexe.htm

National Institutes of Health. *Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults*. Bethesda: National Institutes of Health, 1998. http://www.nhlbi,nih.gov/nhlbi/obes/

Ontario Health Services Restructuring Commission. *Primary Health Care Strategy*. Ontario. 1999.

Shoultz, J and Hatcher, PA. Looking Beyond Primary Care to Primary Health Care: An Approach to Community-based Action. *Nursing Outlook*. 1997; Jan/Feb : 23-26.

Stamler, R, Stamler, J, Grimm, R, Gosch, FC, Elmer, P, Dyer, A, Berman, R, Fishman, J, Van Heel, N. Nutritional Therapy for High Blood Pressure: Final Report of a Four-Year Randomized Controlled Trial. The Hypertension Control Program. *JAMA* 1987; 257(11): 1484-91. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3546747&dopt=Abstract

Trembly, MS and Willms, D. Secular Trends in the Body Mass Index of Canadian Children. *CMAJ* 2000; 163 (11): 1429-33. http://www.cma.ca/cmaj/index.htm

United States Department of Health and Human Services. *The Surgeon General's Report on Nutrition and Health*. Washington, DC, 1998. http://www.mcspotlight.org/media/reports/surgen_rep.html

Wanke, M, Saunders, LD, Pong, R and Church, WJB. Building a Stronger Foundation: A Framework for Planning and Evaluating Community-based Health Services in Canada, Health Canada. Ottawa. 1995. http://www.hc-sc.gc.ca/hppb/healthcare/pubs/foundation/framework.htm

Watson-Jarvis. A Regional Model for Access to Paediatric Nutrition Services. *Paediatric Nutrition Network Newsletter*. Dietitians of Canada. August 2000.

WHO. Alma-Ata Declaration. *International Conference on Primary Health Care.* 1978.

WHO. Obesity: *Prevention and Managing the Global Epidemic: Report of a WHO Consultation on Obesity*. Geneva: Switzerland. WHO, 1998. http://whqlibdoc.who.int/hq/1998/WHO_NUT_NCD_98.1_(p1-158).pdf

Zollner, H. and Lessof, S. *Population Health – Putting Concepts Into Action*. Final Report. WHO. 1998. http://www.hc-sc.gc.ca/hppb/phdd/pube/report.html

WHO. *The Ottawa Charter for Health Promotion*. 1986. http://www.hc-sc.gc.ca/hppb/phdd/resources/index.html

Young, TK. *Population Health. Concepts and Methods*. NYC: Oxford University Press, 1998.

Appendix

Scenarios Illustrating the Role of the Registered Dietitian in PHC

Scenario 1 –Enhancing Breastfeeding Within the Community

Elements of PHC in Action:

- ✓ *Community-identified need*
- ✓ *Intersectoral approach*
- ✓ *Interdisciplinary team*
- ✓ *Enabling environment*
- ✓ *Support for community capacity building*
- ✓ *Access to appropriate care provider*

Shortly after giving birth to their first child, Susan and her husband had an unwelcome experience in a local restaurant when Susan began to breast feed their baby during dinner. She followed up with some other new moms within her circle of friends and confirmed that this was not an isolated situation.

In thinking about the action that she and her husband might take to make their community more "breastfeeding friendly," Susan recalled that when she and her husband were taking prenatal classes, the public health nutritionist - a registered dietitian - had provided an educational session on the health benefits of breastfeeding. When they called the dietitian, she assisted in researching the issue and found that the breastfeeding initiation and duration rates for that region were the lowest in the province. The dietitian helped Susan and her husband to organize a breastfeeding advocacy committee chaired by Susan's husband, and comprised of the dietitian, public health nurse, a La Leche leader, a high school teacher, a spiritual leader, a representative from the local newspaper and individuals from the local business community, including restaurateurs.

With the support of the media and health personnel, the group launched a public awareness campaign, which included a series of public service announcements and posters describing the health benefits of breastfeeding. Members of the committee approached other community leaders and engaged them in distributing the posters and talking with business owners and their staff about the desirability of promoting breastfeeding in the community. The dietitian and the public health nurse provided inservice presentations to the Hospital Board and staff of the primary care clinics, which resulted in a change in policy and a discontinuation of free infant formula distribution to new mothers.

It took several months to bring about a visible acceptance of breastfeeding as the "norm" in the community. However, what started out as one couple's negative experience, turned into a community-wide initiative that will impact positively on future health of children in that community.

Scenario 2 – A Community-Based Diabetes and Health Promotion Initiative

Elements of PHC in Action:

- ✓ *Access to appropriate care provider*
- ✓ *Interdisciplinary care*
- ✓ *Continuity & coordination of services*
- ✓ *Personal capacity building*

Mr. Baines had been recently diagnosed with type 2 diabetes. On his last three visits to his physician his sugars remained extremely high in spite of his attempt to make changes in his diet on his own. His doctor started him on insulin and referred him to Lynn Westman, the registered dietitian involved in the diabetes education program in his community, for nutrition education.

During the routine assessment, Lynn learned that Mr. Baines made his living as a driver for a transport company and was the sole supporter of a large family. He was finding it difficult to cope with his diabetes and reported that he frequently felt quite light headed and shaky. He was quite angry that his life had become so difficult, and at points during their interview denied that he did have diabetes.

Lynn helped Mr. Baines to understand the basic principles of healthy eating for people with diabetes. She used her knowledge of nutrition, insulin and diabetes care to suggest ways that he could use familiar, convenience foods on his trips. She also provided him with the guidelines for commercial driving for people with diabetes and taking insulin and how to recognize and treat hypoglycemia.

Next Lynn asked Mr. Baines about how he was managing with blood sugar testing. He responded that he felt it was a waste of time, since sometimes it was low and sometimes high. Lynn explained the reasons for these variations in blood sugar and showed him how to modify the timing of his meals and food choices to gain better control. Lynn and Mr. Baines reached agreement about the importance of sharing these difficulties with the doctor so that he had a better understanding of challenges Mr. Baines was facing. Lynn indicated that she would follow up with his doctor and would also arrange a family conference that included the diabetes education team to support Mr. Baines in planning his next steps.

As they finished the interview, Mr. Baines remarked on how much more he understood about his illness and the positive steps he could take to feel better.

Immediately after their meeting, Lynn contacted Mr. Baines' Family Physician to advise him of the issues identified from her interview. The diabetes education team then met to discuss Mr. Baines' care plan, and negotiated goals. These plans were also shared with the doctor.

Scenario 3 - An Interdisciplinary Community-Based Team Approach to High Risk Pregnancy

Elements of PHC in Action

- ✓ *Access to appropriate care provider*
- ✓ *Interdisciplinary team of providers*
- ✓ *Continuity & coordination of care*
- ✓ *Intersectoral linkages*
- ✓ *Personal capacity building*

Sixteen-year-old Joanne had been hiding her pregnancy for the past 4 months. She was too scared to tell anyone that she was pregnant, but finally broke down and told her friend. Her friend knew of a prenatal program in their community where Joanne might feel comfortable.

Joanne and her friend went to the program together. Once they arrived, the atmosphere was casual, and other girls her age were at the program – this put Joanne at ease. This program operated in the same community where Joanne lived. It used a multi-disciplinary team approach with dietitians, public health nurses, community clinic nurses and peer outreach workers (employees of the program who share some similar life experiences as the women in the program) - all working together.

The first person to greet her was a dietitian with the program. Joanne expressed concern with her pregnancy. Joanne and the dietitian spent some time talking; the dietitian discovered that Joanne's family didn't know about her pregnancy and she had not yet seen a doctor or midwife. Joanne and the dietitian spent time talking about her usual food intake, improvements Joanne felt she could make such as, taking a prenatal vitamin. Joanne had not weighed herself since she became pregnant. The dietitian had a scale and offered it so Joanne could weigh herself. Joanne wanted to know if she had gained any weight yet; they discovered that she had actually lost weight and expressed concern over this. They sat down and discussed goals that Joanne felt were attainable to help her gain weight. Joanne stated that she was feeling better about her pregnancy. The dietitian discovered that Joanne's family was on social assistance and money for food was tight at the end of the month. They brainstormed ways of stretching her food budget and the dietitian let Joanne know of a food bank in her neighbourhood.

The dietitian helped Joanne make contact with the public health nurse at the program to discuss some of her other medical concerns. As well, she introduced Joanne to a peer outreach worker who helped Joanne find a doctor and offered to take her there if she was feeling scared. The dietitian gave Joanne her phone number and encouraged her to call if she had any questions before the next program.