Dietitians of Canada
Les diététistes du Canada

The Need for a Program of Home-based Nutrition Services in British Columbia

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Executive Summary

Dietitians throughout British Columbia (BC) have grave concerns about the current lack of home-based nutrition services in the province and the potential negative implications for the health and well-being of the population.

An estimated 50,500 to 54,000 British Columbians (42,000- 46,000 adults; 8,500-9,000 children) in BC are at nutritional risk with minimal or no home-based nutrition services available. These numbers can be expected to increase in the coming years with the anticipated growth in the proportion (from 13% in 2001 to almost 24% by 2031) and actual number of seniors in BC.

In children, studies of the prevalence of actual malnutrition and the risk for malnutrition in pediatric recipients of home health services indicate that 100% of these clients are at nutritional risk. Malnutrition is especially detrimental in children owing to its effects on growth, development, and quality of life.

In adults, particularly seniors, the prevalence of nutritional risk in Home and Community Care (HCC) clients in BC ranges from 55-60% contrasted to international reports of 43-51%. This difference may be accounted for by the absence or limited availability of home-based nutrition services including nutrition risk screening and timely provision of medical nutrition therapy in BC.

Dietitian-provided home-based nutrition services in most areas of the province are non-existent or wholly inadequate to address the needs of clients in BC at nutritional risk. Only 15 dietitian full-time equivalents (FTEs) in the entire province work with services that provide home-based health services (such as HCC or Health Services for Community Living (HSCL)) compared to the 250 or more dietitian FTEs needed.

Consultations with health and human service professionals representing seniors, health services providers, health authorities, and provincial health services revealed widespread recognition of the problems associated with limited to no access to nutrition services to support people in their homes. Those consulted also supported advocating for a menu of home-based nutrition services to address client needs.

Based on the review of literature, the current and desired situation in BC, and input gathered from the consultation process, dietitians in BC recommend a province-wide, coordinated, integrated and accessible program of home-based nutrition services. Home-based nutrition services must be an integral component of health services delivered across the continuum of care to all populations.

It is recommended that:

1. The Ministry of Health working together with health authorities, expand the existing infrastructure to support a continuum of integrated, coordinated and accessible nutrition services that bridges the nutrition care gap between hospital and home including:
   - a hospital-to-community liaison process that facilitates a seamless continuum of nutrition services
   - community-based nutrition services (e.g., chronic disease management, primary health care, specialized services for children and adults with special needs) that better meet the nutrition needs of British Columbians
   - home-based nutrition services that better meet the nutrition needs of British Columbians
   - telehealth nutrition services that promote self-care and way finding, and includes linkages with community- and home-based nutrition services and other community supports.
2. The Ministry of Health, working together with health authorities, develop and implement a province-wide, systematic and consistent means to evaluate and report on the use/outcomes/effectiveness of new and expanded community- and home-based nutrition services to inform ongoing planning.
3. The Ministry of Advanced Education adequately fund the University of British Columbia Dietetics Education Program to prepare sufficient dietitians to meet the health needs of British Columbians.
4. The University of British Columbia Dietetics Education Program provide training to prepare dietitians for work in home-based care delivery settings.
5. Dietitians of Canada link dietitians to practice-based research supports (e.g., Practice-based Evidence in Nutrition, study groups, or think tanks) to contribute to knowledge creation, dissemination and translation related to home-based nutrition services.

The proposed program supports the third of the *Five Great Goals for BC* to "build the best system of support in Canada for persons with disabilities, those with special needs, children at risk, and seniors".

Benefits of the proposed program of home-based nutrition services would, as demonstrated in other provinces and internationally, reduce costs associated with preventable hospitalizations and the use of other health services while enhancing the quality of life of British Columbians. Specific benefits include:

- reduced acute care use (decreased emergency services use; decreased length of stay; decreased intensity of care; decreased number and frequency of admissions)
- reduced client/family/caregiver anxiety and stress (related to enhancing knowledge and skills on condition management for secondary and tertiary prevention)
- improved nutritional status through access to medical nutrition therapy
- in children, enhanced growth and development (lower long term costs)
- enhanced client and caregiver quality of life.

Consequences of inaction include ongoing, escalating costs of acute care service use for preventable nutrition related health issues such as hip fractures, constipation, diarrhea, dehydration, and malnutrition.

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Statement of the Problem

Dietitians[1] across British Columbia have grave concerns about the lack of home-based nutrition services[2] in the province and the potential implications on the health and well-being of the population. Malnutrition is preventable yet British Columbians are put at risk for malnutrition every day through non-attention to basic nutritional requirements to support life and to enhance quality of life. This situation applies to people of all ages, children and adults, who are discharged from hospitals or institutions without consideration of how they will access, prepare and consume food at home. Also affected are people living in communities whose nutritional needs are not identified until their conditions have deteriorated such that they require hospitalization for nutritional rehabilitation and medical management.

The purpose of this report is to:

1. outline the vision for home-based nutrition services in BC
2. provide evidence and information to support the vision, specifically:
   a. evidence on the importance of home-based nutrition services
   b. data on the current state of and gaps in these services for children and adults in BC
3. propose solutions based on input from dietitians and other health professionals representing seniors, health service providers, health authorities, and provincial health services .

1 *Dietitians* are a regulated health profession in BC.

2 *Home-based Nutrition Services* refers to nutrition risk screening and medical nutrition therapy (MNT) for clients' living in at home, not in institutions. MNT involves assessment of the nutritional status of patients with illnesses, or injuries that put them at risk (including review and analysis of medical, diet, and social histories, laboratory values, and anthropometrics measurements), the implementation of nutrition modalities most appropriate to manage the condition(s) or to treat the illnesses or injuries, nutrition education and counselling, establishing and maintaining nutrition support via enteral and parenteral nutrition (as necessary), and liaising/collaborating with community supports/ services (1).

Vision for Home-based Nutrition Services in BC

Dietitians envision a province-wide, accessible, integrated, and coordinated program of home-based nutrition services to prevent malnutrition and to minimize the associated fiscal and social costs.

The purposes for a program of home-based nutrition services would be to:

- improve or maintain the health status of individuals
- improve functional abilities and quality of life
- prevent or delay hospitalizations and institutionalizations
- prevent unnecessary use of acute care, emergency room, and physicians' office visits, and
- facilitate earlier hospital discharges.

The guiding principles for a program of home-based nutrition services in BC include:

- equitable access in all areas of the province
- aim to prevent malnutrition (prevention takes fewer resources than rehabilitation)
- rooted in health promotion/prevention/self care principles
- support for clients and their families (there is a heavy reliance on family/caregivers, sometimes with unfortunate consequences of caregiving)
- networked community of home care providers (e.g., dietitian, nurse, home care worker), and
- based on best or promising practices (and contribute to knowledge creation/dissemination in this area where evidence is limited or does not exist).

Relevance to BC Government's Vision, Mission and Goals

Dietitians of Canada's vision for home-based nutrition services in BC is consistent with the:

1. Third of the BC government's *Five Great Goals* to "build the best system of support in Canada for persons with disabilities, those with special needs, children at risk, and seniors" (2).
2. BC Ministry of Health vision, "a health system that supports people to stay healthy, and when they are sick provides high quality publicly funded health care services that meet their needs" (3).
3. BC Ministry of Health mission "to guide and enhance the Province's health services to ensure British Columbians are supported in their efforts to maintain and improve their health" (3).
4. BC Ministry of Health goals (4):
    i. *Improved Health and Wellness for British Columbians*: British Columbians are supported in their pursuit of better health through health protection and promotion and disease prevention activities.
    ii. *High Quality Patient Care*: Patients receive appropriate, effective, quality care at the right time in the right setting. Health services are planned, managed and delivered in concert with patient needs.
    iii. *A Sustainable, Affordable, Publicly Funded Health System*: The public health system is affordable, efficient and accountable, with governors, providers and patients taking responsibility for the provision and use of services.
5. BC Ministry of Health assurance to "continue with the renewal of residential, home and community care to better meet the contemporary needs of British Columbians" (5).
6. BC Ministry of Health Primary Health Care Charter 2007 (6) aim of "a strong, effective, accessible and sustainable primary health care system" with 2007-08 key initiatives in chronic disease management, co-morbidity management and the frail elderly care that "further align health authorities' services, such as home nursing care and nutrition support services, to better collaborate with primary health care providers and to meet the needs of the population."

Relevance to Vision for Healthy Aging

The *Vision for Healthy Aging* report (7) cites healthy eating for healthy aging as one of five key focus areas. Directions for policy and practice outlined in the report include "addressing the multiplicity of factors and barriers that affect older adults' food choices; their nutritional needs; the determinants of nutrition status (e.g., underlying health conditions and consumption patterns); and vulnerability to deficiencies and nutritional problems (p. 34)." The report stresses that healthy eating and nutrition policies should aim to promote and enable healthy choices for seniors, who have unique nutritional needs. A program of home-based nutrition services would support seniors who struggle to maintain a safe and appropriate diet to meet their changing nutritional needs owing to aging and chronic disease, and would be a valued and integral component of home-delivered health services (8).

Benefits of Home-based Nutrition Services

Anticipated benefits of province-wide, coordinated home-based nutrition services based on reports of services offered elsewhere in Canada and internationally are:

- reduced incidence of malnutrition (9, 10, 11); improved nutritional status through access to medical nutrition therapy services, resources, and connections.
- in children, enhanced growth and development (lower long term costs) (12).
- reduced use of health services including reduced number of hospital admissions and emergency room visits (13, 14, 15, 16), reduced frequency of admissions (9), decreased intensity of care, and decreased length of stay (10). Clients with nutritional problems were 2.58 times more likely to have used health care services including hospital admissions and emergency room visits (15).
- enhanced quality of life of clients (16, 17) and caregivers (13).
- increased satisfaction of family caregivers of those receiving home-based care (related to enhanced knowledge and skills on condition management for secondary and tertiary prevention) resulting in decreased home care use and emergency room visits (16).
- achieved the same nutritional benefits as those of patients who received standard hospital-based nutrition services but at one-third the cost (10).

In *The Case for Chronic Home Care Services, A Policy Paper* (18), Hollander summarized the growing body of Canadian evidence that home care for persons with ongoing care needs can be a cost-effective intervention and can reduce demands on the institutional sector, thus increasing the overall efficiency of the health care system. Hollander (18) reported that the average annual costs to government for people with moderate care needs (Intermediate care 1 or IC1) in the mid-to-late 1990s, in British Columbia, were $9,624 for persons on home care and $25,742 for people in institutions. These findings lend support to the need for home-based nutrition services as part of a coordinated program of HCC services provided through regional health authorities (RHAs).

A 17 year old boy with Cerebral Palsy, when admitted to hospital, was 5 feet 8 inches in height and weighed 57 pounds (BMI of 8.7 kg/m2). A BMI of less than 18.5 is considered underweight; ideal weight for a 17 year old, 68 inch male is 140 to 172 pounds depending on frame size. The admission had been intended for weekend respite care however, the hospital stay was prolonged to address the youth's profound malnutrition. The family requires extensive nutrition follow up. The family would be better served with home-based nutrition services as the family struggles to bring him in weekly to see the dietitian and health care team in the outpatient setting. While it is not the mandate of our facility to provide this type of outpatient care, ethically I could not turn the family away. Perhaps malnutrition could have been prevented had supportive home-based nutrition services been in place.

Nicole Cave, RD, CNSD
Sunny Hill Health Centre for Children, Vancouver

Reasons Clients Require Home-Based Nutrition Services

For some people, the need for nutrition services is brief to determine nutritional needs and to put nutrition care plans into action. Others with complex and constantly changing nutritional needs require nutrition services longer term.

Children

Home-based nutrition services are critical for children with special health care needs as malnutrition impairs physical and cognitive growth. While these deficiencies and disabilities are preventable with adequate nutritional support, they often lead to permanent mental or physical disability that subsequent nutritional replenishment is unable to reverse (12).

MacDonald (19) described recommended nutritional support as follows:

> *The patient's nutritional needs should be assessed, regularly reviewed, and nutritional treatment tailored to meet the changing clinical and psychosocial needs of the patient. Nutritional intervention is not without complications, and in particular attention to normal feeding behaviour and vigilance when instituting supplementary nutrition may prevent many feeding difficulties.*

The nutritional needs of children with special health care needs are described in the following:

> *Children and adolescents with special health care needs are those who have congenital or acquired conditions that affect physical, behavioral and/or cognitive growth and development and who require more than the usual pediatric health care. The term refers to children who have developmental disabilities, chronic conditions, or health-related problems as well as those who are at risk for these conditions. These children may have medical diagnoses such as Downs syndrome, cystic fibrosis, cerebral palsy, pediatric HIV/AIDS, spina bifida, muscular dystrophy, autism, Prader-Willi syndrome, and others (20).*

Adults

Adult clients may require home-based nutrition services for assessment, counselling and support for dietary modifications for one or more of the following:

- chronic or life threatening medical conditions including cancer, diabetes, respiratory illnesses, heart disease, gastrointestinal disorders, HIV/AIDS, etc.
- dysphagia
- tube feedings
- transition from tube feedings to oral diet
- dehydration
- constipation or diarrhea
- unintentional weight loss associated with surgery, chronic disease, pain, etc.
- symptom management related to surgery/drug, radiation or other therapies.

This list of conditions/situations is consistent in what is reported in the international literature, and what was observed in the BC studies of HCC client needs (Appendix 1).

> I got a telephone call looking for a dietitian to provide counselling for a home-bound, 22-week pregnant woman who had lost 30 pounds due to gallstones. Our mandate in public health nutrition is primary prevention on a population health basis; we do not provide nutrition care to individuals. This woman could not get to the hospital to see the outpatient dietitian. Because she was not a continuing care client, the Home Care dietitian in our area couldn't see her either. Finally, a telephone consultation with the outpatient dietitian was arranged.
>
> This situation is typical of those I am called to sort out on a regular basis. We spent all morning calling around to see what services might be available which was inefficient and highlights the BIG gap in nutritional care services in BC.
>
> **Deanna Tan, RD**
> **Public Health Nutritionist,**
> **Fraser Health**
> **Maple Ridge/Pitt Meadows**

A rehabilitation client in a northern community was airlifted to a large regional hospital to have a PEG (tubefeeding valve inserted through the abdomen into the stomach) placed. The hospital dietitian was not made aware of client having the procedure; the client was returned to the small, local care facility to be stabilized and to learn tubefeeding. The facility nursing staff did not have the appropriate supplies or information on initiating tubefeedings. On an emergency basis, I worked with the nurses by long distance to sort out these details. Locally, there was a similar occurrence where a client had a PEG inserted during a day care procedure and was sent home without teaching and supplies. The hospital where the tube is inserted carries the responsibility for tubefeeding education and arranging supplies. When surgeons don't inform the dietitians, patients are discharged without support and education (as in these two cases).

Kathleen Beggs, RD
G.F. Strong Rehabilitation Centre, Vancouver

Seniors

Seniors are the majority of HCC clients thus a home-based nutrition services program can help address the food access/consumption challenges that seniors experience by linking them to available food and nutrition programs and services. Since population projections are for a steady rise in the proportion and actual numbers of seniors in British Columbia (from 13% in 2001 to almost 24% in 2031) (21), the challenges to identify, prevent, and address nutritional risk in seniors will increase each year.

The BC Provincial Health Officer's Annual Report 2005 (22) outlined the challenges seniors face to maintain their nutritional status. Particular needs of seniors include increased needs for nutrients, particularly fibre, vitamins D and B12, and attention to hydration at the same time that access to food, or difficulties preparing and consuming food can negatively affect food intake. Maintaining food intake can prove to be difficult as described in the following:

> *Social isolation and a decreasing ability or desire to prepare meals can be a barrier to healthy eating in seniors. This can be addressed by eating meals in groups, and other initiatives to ensure nutritious meals for seniors are easily accessible and enjoyable for all aging citizens (22).*

Mental Health Clients

Home-based nutrition services have relevance for mental health best practices, particularly with efforts for clients to live as community members in a variety of housing options. Considerations to ensure the nutritional well-being of mental health clients include basic nutrition education about making and preparing healthy food choices, as well as ensuring choices are appropriate for any pharmaceutical agents in use (23), and concurrent medical conditions. Some nutrition education and counselling needs could be addressed with appropriate dietitian access through community services; other needs would need to be addressed through home-based service delivery.

Current State of Affairs

British Columbia

An estimated 50,500 to 54,000 British Columbians (42,000-46,000 adults; 8,500-9,000 children) are in need of home-based nutrition services in BC (Appendix 2). This estimate was derived through tabulation of clients currently receiving home-based health services (Appendix 3), and applying prevalence of nutrition risk rates drawn from the literature (Appendix 4). Risk of malnutrition in HCC clients in BC, determined through the use of staff-administered, valid and reliable survey instruments, is estimated to be between 55-60%. This is higher than the 43-51% risk rates reported internationally.

Care of these patients and support for health professionals is patchy or non-existent (24).

Dietitian-provided home-based nutrition services in most areas of the province are non-existent or wholly inadequate to address the needs of clients in BC at nutritional risk. Only 15 dietitian FTEs in the entire province work with services that provide home-based health services (such as Home and Community Care (HCC) or Health Services for Community Living (HSCL)) compared to the 250 or more dietitian FTEs needed (Appendix 2). Most of these dietitian positions are portions of FTEs (e.g., 0.2, 0.4, etc.); dietitians piece together employment by working at various part time positions in their communities often with very different client groups (not always working with clients requiring home-based nutrition services). Dietitians in these partial positions report that they screen clients and serve only those with the most urgent needs. This leaves the majority of people at nutritional risk in communities without nutrition services.

In the few BC communities where dietitian-delivered home-based nutrition services do exist, these tend to be primarily for adults, and for nutritional assessment/care plan development and tubefeeding support. Services for children are extremely limited, and follow up nutrition services for both populations are not always possible owing to limited or non-existent dietitian staffing. The current situation in most of BC is reflected in the following excerpt from the evaluation report of a pilot Community Care RD program in Interior Health (25).

While this refers to the elderly, it is applicable to clients across the lifespan:

> *The elderly population that is housebound or in assisted living residences are not receiving any form of nutritional care. Home support workers are not able to service complex nutritional requirements, patients recently discharged from the acute setting do not have access to appropriate clinical nutrition follow up. Some patients remain as acute inpatients due to the inability to support their clinical nutrition plan at home (tube feeds, etc.). Short stay acute patients who arrive malnourished are discharged while still malnourished with no support to improve their nutritional status in the community. Poor nutritional status of patients admitted to the acute sites prolongs the healing process after medical care is administered. The opportunity exists to reduce acute patient days, while better supporting people in the community both pre- and post-surgery, and promoting better health through better nutrition within the aging population.*

Other Canadian Provinces

Information available from Ontario and New Brunswick demonstrates that BC is behind in providing home-based nutrition services relative to what is available elsewhere in Canada (see Appendix 5 for details). Home-based nutrition services are provided using different models and include:

- New Brunswick's Extramural Hospital Program: This program is also referred to as 'hospitals without walls'. Professional service providers may include nurses, dietitians, respiratory therapists, occupational therapists, physiotherapists, speech language pathologists and where funded, social workers. Services offered include acute care, palliative care, home oxygen program, long term care assessment and rehabilitation services. Services provided are comparable to what would be provided within hospital settings but do not require the physical space/ capital outlay. Dietitians provide nutritional assessments, interventions (including treatment, education and consultation), service planning and coordination (26).

- The Ontario Community Care Program involves Community Care Access Centres (CCAC): CCACs are consolidations of the services formerly provided by 38 home care programs and 36 placement coordination services. Visiting services are health and support services provided in the home on a visitation basis to enable people to remain in their own homes, return home more quickly from hospital, or to delay or prevent the need for admission to a hospital or long-term care facility. Visiting services may be provided to Ontario residents of any age and anyone can make a referral. The services are 100% funded by the Ontario Ministry of Health and Long-Term Care. Dietitians working with CCACs are independent contractors who bill the CCAC they work with per client visit; fees vary depending on travel distances to get to clients' homes. Dietitians designate client priorities; this determines the order and frequency of nutrition consultation (27).

Recommendations to Achieve the Vision

The frequent failure to recognize and treat malnutrition, especially where it is common, is unacceptable. In such circumstances, the routine use of a simple screening procedure is recommended. Each health care setting should have a transparent policy about nutritional screening, which may vary according to the 'care gap', available resources, and specific populations of patients, in which the prevalence of malnutrition may vary widely (14).

Key informant dietitians (Appendix 6) working in acute care, public health, rehabilitation institutions, and industry as well as other reviewers representing seniors, health services providers, health authorities, and provincial health services (Appendix 7) consistently outlined the need for a coordinated, province-wide program of home-based nutrition services for risk reduction, and to reduce acute care service use (with associated cost savings). Dietitian informants unanimously described their efforts to attempt to piece together supports/information in the hopes clients would be able to manage their nutritional needs safely.

Therefore, it is recommended that:

1. The Ministry of Health working together with health authorities, expand the existing infrastructure to support a continuum of integrated, coordinated and accessible nutrition services that bridges the nutrition care gap between hospital and home including:
   - a hospital-to-community liaison process that facilitates a seamless continuum of nutrition services
   - community-based nutrition services (e.g., chronic disease management, primary health care, specialized services for children and adults with special needs) that better meet the nutrition needs of British Columbians
   - home-based nutrition services that better meet the nutrition needs of British Columbians
   - telehealth nutrition services that promote self-care and way finding, and includes linkages with community- and home-based nutrition services and other community supports.
2. The Ministry of Health, working together with health authorities, develop and implement a province-wide, systematic and consistent means to evaluate and report on the use/outcomes/effectiveness of new and expanded community- and home-based nutrition services to inform ongoing planning.

Recommendations - continued

3. The Ministry of Advanced Education adequately fund the University of British Columbia Dietetics Education Program to prepare sufficient dietitians to meet the health needs of British Columbians.
4. The University of British Columbia Dietetics Education Program provide training to prepare dietitians for work in home-based care delivery settings.
5. Dietitians of Canada link dietitians to practice-based research supports (e.g., Practice-based Evidence in Nutrition, study groups, or think tanks) to contribute to knowledge creation, dissemination and translation related to home-based nutrition services.

What is Dial-A-Dietitian?

Dial-A-Dieititan (DAD) (www.dialadietitian.org), is a call centre nutrition information service that has been in operation for 35 years. DAD dietitians provide nutrition information and consultation by telephone, guide clients to other nutrition services for in-depth counselling needs, and produce and distribute easy-to-use printed and web-based client resources. Until 2007 with the creation of a similar service in Ontario, the BC DAD was the only one of its kind in Canada.

> When working as a Home Care dietitian, I saw a HCC client who was not on my caseload but needed nutrition follow-up. He had been discharged on a tubefeeding and needed to be reassessed as he had wounds and increased protein needs. His (desirable) weight gain had caused the tube flange to become buried under his skin. There were many issues and it was difficult for him to get out of his home for appointments.
>
> **Kathleen Beggs, RD**
> **Vancouver**

Costs of Action

Anticipated costs include:

- dietitian staff
- clerical staff
- provincial dietitian coordinator
- information systems support
- office set up and operations costs
- operating funds for systems development, staff training, and contribution to dietetic education/ professional development
- evaluation and research support and related transportation/presentation costs (including publication and knowledge translation).

Risks and Consequences of Inaction

Consequences of inaction in addressing the home-based nutrition service needs of British Columbians include:

- ongoing, escalating cost of acute care service use for preventable nutrition related health issues (such as hip fractures, malnutrition, dehydration, constipation, and diarrhea). Interior Health (25) estimated the costs of hospital based care as $846.00 per day relative to the overall $126.00 cost of providing home-based nutritional care.
- perpetuating current problems that will grow if not addressed. These are associated with:
  - the aging population
  - greater incidence chronic disease
  - increased exacerbations of chronic disease
  - pressures on hospitals to provide 'acute' care with increasingly technical support; those no longer in need of or using these supports are discharged
  - patients discharged from hospitals after shorter stays and while not fully recovered.
- increasing numbers of clients requiring assisted living or facility care
- 'burden of care' placed on families/supports (where these are available); daily activities/managing challenges for clients and their families/caregivers (with 'burnt out' clients there is the potential to create additional health service users and escalate costs).

Health Canada described the consequences of malnutrition in seniors as follows:

> *Consequences of malnutrition noted in seniors include weight loss and low body weight. These are associated with hip fractures, decreased independence, and increased mortality rates. Early intervention is critical to avoid the downward spiral associated with malnutrition that often occurs without immediate explanation and involves a gradual decline in cognitive and physical functions, weight loss, reduced appetite, and social withdrawal* (29).

The BC Ministry of Health described the effects of impaired intake for seniors as follows:

> *Inadequate intake of energy and some nutrients have been associated with decreased body strength, lower resistance to infection and poorer indicators of quality of life. Both an inadequate body weight for height, and weight loss are associated with hip fractures, reduced autonomy, early institutionalization and increased mortality rates* (30).

The VIHA report on nutrition in home care noted:

> *Malnutrition and its sequelae compound chronic disease conditions precipitating admissions to hospital or community care facilities, prolonging duration of hospital stays, increasing use of other health care services such as physician visits, HCC, emergency care and increasing the use of pharmaceuticals* (31).

The consequences of malnutrition are not confined to the aging population in BC and include all people from birth to old age, those who are able-bodied and disabled, those with special needs, and those living with any acute, chronic or debilitating medical conditions whose food and fluid intake is or at risk of being impaired.

Summary

This report, based on a review of the literature, an assessment of the current situation in BC, and consultations with health and human service professionals has demonstrated the urgent need for a province-wide, coordinated program of home-based nutrition services to address the needs of populations currently living at nutritional risk who have little to no access to nutrition service to prevent and reduce this risk. These services should be accessible to all British Columbian of all ages, and would, if available, reduce costs associated with preventable hospitalizations and the use of other health services while enhancing the quality of life of British Columbians. Recommendations contained in this report are consistent with the provincial government's vision, mission, goals and initiatives.

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Appendices

Appendix 1: Summaries of BC Studies Related to Community-based Medical Nutrition Therapy Services

North Okanagan Health Region

The *North Okanagan Health Region Home Care Nutrition Screening and Intervention Project* (32) was undertaken in the Vernon/Lumby/Armstrong/Enderby/Shuswap region from November 2000 to March 2001 to assess the level of nutritional risk of Community Care Health Services (CCHS) clients using the *Seniors in the Community: Risk Evaluation for Eating and Nutrition* (SCREEN) tool (33), and to determine the effectiveness of nutrition intervention for CCHS clients with a registered dietitian (RD) using a between groups comparison design.

Findings were that 59% of CCHS clients were at nutritional risk, and that there was a highly significant reduction in nutritional risk for those clients who received intervention relative to the comparison group. Recommendations were that at least one Home Care RD position be created, and that an alternate to the SCREEN be developed. The outcome of this project and local advocacy resulted in two RD positions (1.6 FTE) created in the fall of 2006; 1.0 FTE RD working in Kamloops and 0.6 FTE based in Vernon.

Fraser Health (formerly South Fraser Health Region)

The former South Fraser Health Region (now part of Fraser Health) commissioned two needs assessments in 1999 (34) and 2001 (35) for community-based nutrition services.

Home Care Nutrition Needs Assessment

A needs assessment for Home Care Nutrition was undertaken in 1999 in the South Fraser Health Region (SFHR) (now known as the South area of Fraser Health encompassing Langley, Surrey, White Rock, and Delta). The needs assessment involved nutrition risk assessment of Continuing Care clients, identification of numbers of clients being discharged from hospital at nutritional risk without access to nutrition care in the community, five focus groups with continuing care staff about their experiences working with clients at nutritional risk, and four focus groups with hospital dietitians about the types of clients they work with in hospital who are discharged without adequate community-based nutrition services.

Findings of nutrition risk screening were that 44% of clients were at high, 34% were at moderate, and 22% were at low nutritional risk using the DETERMINE screening tool (36). Challenges that clients experienced included tubefeedings, dysphagia, limited abilities to physically eat and/or digest food in sufficient quantities to meet nutritional needs, unable to shop for or otherwise obtain food, and living with multiple comorbidities requiring dietary modifications. In a one month period, hospital dietitians identified 37 clients that they felt upon discharge should have community-based nutritional care (although none were available).

Focus groups with both community care staff revealed that there was frequent need for home care dietitian involvement; that the nutritional issues arising were beyond the nurses' knowledge and abilities to provide appropriate nutritional care. The hospital dietitians' focus group resulted in an articulation of the nutritional problems clients of all ages and medical/mental health conditions experience out of hospital, some of the health service and demographic reasons for the growth in need for out of hospital medical nutrition therapy services, and the 'bandaid' efforts hospital RDs put into compensating for absence of community-based nutrition services through telephone contact with clients and/or home care nurses.

Nutrition Services for Children with Special Needs

The purpose of the Nutrition Services for Children with Special Needs project (35) was to estimate the numbers of special needs children at nutritional risk in the SFHR, and through consultation with families and community services, to envision the care model appropriate to addressing the nutrition care needs of potential clients. As no screening tool was available for this population at the time, the conservative estimate was 1,183 children with special needs (ages 0 to 19 years) who could benefit from nutrition services in the SFHR. The literature based recommendation for caseload for this population is 200 clients per RD resulting in the recommendation for 5.9 FTE RDs to meet client needs. Potential cost savings in terms of reduced health services use (notably in hospital admissions) were outlined.

Vancouver Coastal Health

Nutrition risk screening of 308 North Shore seniors from 25 organizations at 31 settings (**not** home-based nutrition services clients) between January and April, 2002 using the SCREEN tool (37) revealed that 36% of those screened were at nutritional risk (37). Most frequent items that accounted for nutritional risk were weight change (loss or gain) (49%), frequency of eating vegetables and fruits (31%), cooking difficulties (30%), and shopping difficulties (26%). Chewing and swallowing difficulties accounted for 19% and 16% respectively of the risk factors. The study advisory group representing 22 service providers found that the screening process helped them focus their nutrition interventions, and that, with appropriate training on the use of the instrument, that SCREEN was effective in identifying seniors at nutritional risk.

Vancouver Island Health Authority

The *Nutrition in Home Care* project (31) was undertaken to assess:

i. the prevalence of nutrition risk in 230 randomly selected HCC and LTC clients referred for long term care services;

ii. the effects of hospitalization duration from HCC Nutrition Services;

iii. the financial benefit of HCC nutrition services.

Data collection to assess the prevalence of malnutrition was undertaken in 2000-2001. Prevalence of malnutrition using the SCREEN tool (33, 34) (as with the NOHR screening project) was assessed as 53% yet less than 1% of these clients had been referred to Nutrition Services. When only one client of those who had been referred to Nutrition Services as a result of screening was found to not be at risk, the SCREEN tool was considered to be an effective means to identify those at nutritional risk.

A retrospective health records assessment of Nutrition Services clients was conducted to determine whether nutrition intervention affected hospital utilization (comparing five year periods before and after nutrition intervention). Findings were that of clients admitted to hospital with a diagnosis related to nutritional risk, clients who had received Nutrition Services experienced an average of five days shorter length of stay than those who did not receive services.

Potential costs saving were calculated as $127,000.00 per year for the decreased number of hospitalization days (n=725 over five years) in the intervention group. The authors indicate that this sum would not affect hospital operations as these savings would not be realized as a monetary benefit. The researchers recommended a prospective randomized research design for future studies of effectiveness to reduce the limitations of the retrospective methods they had used. They also described the difficulties of estimating cost savings accurately in a retrospective study given consideration of resource intensity weights (RIW) in calculations (i.e., not all hospitalizations require the same institutional resource use), and the need to make assumptions about clients' resource use during previous hospitalizations that would affect the outcome of any calculations.

The VIHA study findings were consistent with the literature that clients who receive home-based nutrition services have shorter lengths of hospital stay (although number and frequency of hospitalizations were not reduced).

Appendix 2: Dietitian-Delivered, Home-based Nutrition Services Available in BC

A tabulation of Registered Dietitian (RD) FTEs in BC providing home-based nutrition services[3] indicated that approximately 15 (15.036-15.086) RD FTEs were providing these services as follows:

- 9.9 Home and Community Care (HCC)
- 3.4 Health Services for Community Living (HSCL)
- 0.88 Nursing Support Services (NSS)
- 0.9 other (e.g. North Shore Geriatric Outreach)
- (plus some proportion of 4.9 FTE Vancouver Adult/Older Adult not included in total FTE)

Table 1 is a comparison of existing RDs providing home-based nutrition services relative to actual client needs.

Table 1: Registered Dietitian Services Relative to Client Needs and Recommended Staffing Levels

Service	Client Numbers	Actual RD FTEs	Recommended RD FTE staffing	Disparity
HCC	36,725 - 40,063	9.9 HCC 0.9 seniors outreach Total: 10.8	(1.0 RD per 300 clients per year caseload[4]) 123 - 134	 (at least 112 -124)
HSCL	5,473 - 5,970	3.4	(1.0 RD per 100 clients per year caseload[5]) 55-60	 (52 - 57)
Children (disabilities)	8,000 min	0.88 NSS	(1.0 RD per 100 clients per year caseload) 80	 (79)
Children (other; chronic or life threatening illness)	~500 - 1,000[6] (per BCCA and HSF)	nil	(1.0 RD per 100 clients per year caseload)	(5 - 10)
	50,698 - 55,033	15	263 - 284	(248 - 269)

[3] These data was gathered from BC RDs during the summer of 2006 via electronic listserve requests for data, and confirmed by distribution and review of the RD FTE tabulation for all RHAs.

[4] Workload measurements of RDs working in HCC in BC in Victoria and the Okanagan suggest a ratio of 1.0 FTE RD per 300 new client admissions per year (personal communication, Community Dietitians' teleconferences September 2006; January 2007).

[5] RDs working in HSCL in BC recommend 1.0 FTE RD per 100 new client admissions per year. This ratio relates to the complexity and ever changing nature of the nutritional needs in this population and the RD/family/team communications required to ensure appropriate action on nutrition care plans.

[6] These numbers estimated from numbers of children annually who are diagnosed with cancer (per BC Cancer Agency website), those born with cardiac defects (per Heart and Stroke Foundation website), and estimates of numbers of children who would remain on a home-based nutrition services' active roster. BC Children's Hospital does not provide home-based nutrition services for these children.

Appendix 3: Estimated Needs for Home-based Nutrition Services

Adults

Home and Community Care (HCC) Clients

The estimated numbers of adult HCC clients in BC who would benefit from dietitian-provided home-based nutrition services was estimated to be 36,725 to 40,063 clients annually. This figure was determined by applying the 55-60% nutritional risk factor (see Appendix 4) to the numbers of clients (19 years and over) who received HCC including Home Nursing Care (HNC), Rehabilitation, and Other[7] services during the 2004-05 fiscal year[8] (Table 2; categorized by Regional Health Authority (RHA)).

Table 2: Adult HCC Clients (2004-05) and Number at Nutritional Risk

Service	Interior Health	Fraser Health	Vancouver Coastal Health	Vancouver Island Health Authority	Northern Health	BC
Home Nursing Care	9,408	10,060	7,438	7,863	2,431	36,932
Rehabilitation	5,383	5,782	8,116	8,237	1,282	28,710
Other	0	671	2	458	0	1,131
TOTAL	**14,791**	**16,513**	**15,556**	**16,558**	**3,712**	**66,773**
55% at nutritional risk	8,135	9,082	8,556	9,107	2,042	36,725
60% at nutritional risk	8,875	9,908	9,334	9,935	2,227	40,063

(per Information Resource Management, Knowledge Management and Transfer, BC Ministry of Health)

[7] Services delivered by Quick Response Team, Nutrition, Nutrition OT, and other types of Direct Care not classifiable as any of the above.

[8] 2004-05 data was provided as this was the most recent complete data set available for an entire fiscal year.

Health Services for Community Living Clients

The Health Services for Community Living (HSCL) program provides specialized nursing and rehabilitation services for adults (age 19 or older) with developmental disabilities who are eligible for assistance through Community Living BC (formerly Community Living Services at www.communitylivingbc.ca). In addition to nursing, occupational therapy and physiotherapy services, individuals may qualify for nutrition, dysphagia (swallowing difficulties), dental hygiene, or specialized seating and mobility services (38).

The Ministry for Children and Family Development does not have data available about client numbers receiving service through the Health Services for Community Living (HSCL) program[9]. The estimated number of HSCL clients at nutritional risk (5,473 to 5,970 clients) was calculated by multiplying the number of clients receiving services through Community Living BC (CLBC)[10] by the estimated prevalence of nutritional risk (at least that of the HCC population; 55-60%). The rationale for this estimate is that while the level of nutrition risk in this population has not been assessed, Le Cavalier (24) observed that:

> *"Feeding and gastro-intestinal disorders are common in individuals with intellectual and developmental disabilities (I/DD) presenting multiple implications for community care. Resources for dietetic services seem inadequate in many parts of BC, as evidenced by the numerous reports of HSCL nurses and dietitians. Dietitians manage heavy caseloads and demanding work schedules, and their abilities to monitor individuals' responses to treatment plans are somewhat limited."*

Summary: Needs of Adult Population for Home-based Nutrition Services

The minimum needs of the adult population in BC for home-based nutrition services are estimated as follows:

HCC clients	36,725	to	40,063
HSCL clients	5,473	to	5,970
TOTAL	**42,198**	**to**	**46,033**

Other adults groups that would add to this estimate include those who were not referred to HCC or other home-delivered nursing and care services and who live with chronic or life-threatening conditions, those recovering from surgery or other hospitalizations, and those supported with enteral or parenteral nutrition[11].

9 To be eligible for the HSCL program, clients must be 19 years of age or older and possess a developmental disability (measured intellectual functioning of approximately 70 IQ or lower, with onset before age 18 and measured significant limitations in two or more adaptive skill areas) (38).

10 CLBC provides a range of support services for more than 9,950 adults using either residential or family and day support services, or both including 5,200 adults using residential services; 2 850 in staffed residential; 2,350 in family model homes/semi-independent living situations; 4,750 adults using family and day support services (39).

11 Services for clients on enteral or parenteral support vary; some receive education and training on their feedings in ambulatory or acute care settings but the cost of feedings/supplies is not covered. For some, supplies and equipment are covered, but training is limited to during acute care hospitalizations, or is not arranged at all. Apart from the limited home-based nutrition services available in a small number of locations in BC, there is no organized, comprehensive system for home-based feeding training and monitoring in BC.

Children

Data on the number of children receiving home-based clinical support services is not available as it is for adults. The Ministry of Health does not provide HCC services for children; rather children receive Nursing Support Services (NSS) through the Ministry of Children and Family Development (MCFD). While the MCFD does not maintain detailed statistical records on service provision to families (as qualified families receive services according to individually assessed needs), the estimated number of special needs children in BC in 2005 was described (personal communication 26/7/06, Susan Perkins[12]) as:

- 52,000 children with special needs in BC
- 16,000 receive MCFD delivered services
- 8,000 receive home-based services
- 3,000 of these are considered as severely disabled get 'medical benefits'
- 2,300 children receive services through the 'At Home Program (AHP)[13] (40).

A minimum of 8,000 children in MCFD programs were determined to be among those who could benefit from home-based nutrition services based on the following assumptions:

- the 2,300 children in the AHP are likely to require tubefeeding support. AHP covers feeding equipment and formula but not nutrition consultation/follow up services thus all of these children would be in need of ongoing medical nutrition therapy.
- of the remaining 5,700 children (8,000 minus 2,300) who receive home-based services, 52% are considered to have acute or chronic protein energy malnutrition (PEM); the remaining 48% are at risk of undernutrition (100% with or at risk of undernutrition) based on Grigsby et al's (12) study of pediatric nutritional risk.

This estimate does not include <u>all</u> children in BC who could benefit from home-based nutrition services as those who live with chronic or life threatening conditions are not included in the MCFD numbers. Nor are those who might need short term nutrition support following surgery or accident.

12 Director, Provincial Services for Children and Youth with Special Needs.

13 The AHP provides a range of health supports and services for children with severe disabilities who are assessed as dependent in the areas of eating, dressing, toileting and washing. Children may be eligible for full program benefits or for a choice of respite or medical benefits (40).

Appendix 4: Prevalence of Malnutrition and Nutritional Risk - BC and Internationally

British Columbia

Nutritional risk in HCC clients in BC ranges from 53-78% as determined through trained staff-administered, valid and reliable screening instruments and outlined in Table 3.

Table 3: Risk of Malnutrition (BC)

Location	Reference	Total 'at risk' (%)	Instrument Used	n	Age	Gender (%) F	M
Victoria	VIHA - HCC, 2002 (31)	53	SCREEN[14] (33,37,41)	225	Means: F: 84.5 yr M: 81 yr	80	20
NOHR[15]	NOHR, 2002 (32)	59	SCREEN	116	23-95 yr (71.5 mean)	-	-
South Surrey	McGuire, 1999 (34)	78 (44% high risk; 34% moderate)	DETERMINE[16] (36)	150	-	-	-
North Shore	Tottle, 2003 (42)	36[17]	SCREEN		-	-	-

By excluding the North Shore (Vancouver Coastal Health) findings, the risk of malnutrition in HCC clients in BC, determined through the use of staff-administered, valid and reliable survey instruments is estimated to be between 55-60%. The lower level of risk of malnutrition reported in the North Shore project (42) relates to the difference in this study group compared to the other BC studies (most were attending wellness centres and likely to have been in better health than HCC clients).

The higher rate of malnutrition and nutritional risk in BC (at 55-60%) than the 43-51% reported in the international literature may be accounted for when one considers that the international reports were of client populations where home-based health services included nutrition risk screening and dietitian consultations. The nutritional care gap in BC, where these services are absent or severely limited, may result in clients being or becoming more debilitated nutritionally relative to locations where available nutrition risk screening and medical nutrition therapy services can more readily identify those at risk.

14 SCREEN acronym derived from Seniors Nutrition in the Community: Risk Evaluation for Eating and Nutrition.

15 North Okanagan Health Region.

16 DETERMINE acronym derived from: Disease; Eating Poorly; Tooth loss/mouth pain; Economic Hardship; Reduced social contact; Multiple Medicines; Involuntary weight loss/gain; Needs assistance in self care; Elderly years above age 80.

17 This assessment was conducted with seniors participating in/recipients of community services, not HCC clients.

International

The prevalence of malnutrition and nutritional risk in home care clients reported in the international literature ranges from 43-51% as determined through researcher-administered, valid and reliable screening instruments as outlined in Table 4.

Table 4: Prevalence and Risk of Malnutrition (International)

Location	Reference	Prevalence of Malnutrition (%)	Risk of Malnutrition (%)	Total 'at risk' (%)	Instrument Used	n	Age (years)	Gender (%) F	M
Australia	Visvanthan et al, 2003 (14)	5	39	43	MNA [18]	250	67-99	69	31
Finland	Soini, 2005 (43)	-	-	47	MNA	51	76-93	-	-
Sweden	Saletti et al, 2005 (44)	8	41	49	MNA	353	75-91	64	36
Finland	Soini, 2006 (45)	3	48	51	MNA	178	74-91	78	22

[18] Mini Nutritional Assessment.

Appendix 5: Description of Home-based Nutrition Services in Canada

Synopsis of Extramural Hospital Program, New Brunswick (17)

The New Brunswick Extra-Mural Program (known as the "hospital without walls") provides comprehensive home health care services to New Brunswickers in their homes and in their communities.

The mission of the New Brunswick Extra-Mural Program is to provide a comprehensive range of coordinated health care services for individuals of all ages for the purpose of promoting, maintaining or restoring health within the context of their daily lives. The program also provides palliative services.

The Extra-Mural Program is established within the Regional Health Authorities. It provides quality home health care services to eligible residents when their needs can be met safely in the community.

Services are available to all residents of New Brunswick who meet the following eligibility criteria. The individual:

1. has a valid New Brunswick Medicare Card (or is in the process of receiving one);
2. has an identifiable health care or functional need that can be addressed through the Program's services;
3. has a need that requires the provision of health care services in the individual's natural environment;
4. has a natural environment that is suitable for the care and service to be provided, both for the individual and the service provider;
5. resides within the area serviced;
6. is referred by an attending physician or designate who has admitting privileges in the Regional Health Authority. For rehabilitation services, the individual can be self-referred or referred by any professional or agency; and,
7. the individual desires and accepts Extra-Mural Program services.

The Extra-Mural professionals provide health care services that include: assessment, interventions (including treatment, education and consultation), service planning and coordination. Professional service providers may include: nurses, registered dietitians, respiratory therapists, occupational therapists, physiotherapists, speech language pathologists and where funded, social workers. Services offered include: acute care, palliative care, home oxygen program, long term care assessment and rehabilitation services.

As an integral part of the health care system, the Extra-Mural Program is involved in a variety of partnerships with other Government Departments and Divisions, health care institutions and agencies in order to provide comprehensive services to clients within their homes and communities.

Synopsis of Ontario Community Care Program (including priority setting resource) (27)

Community Care Access Centres (CCAC) were developed in 1998 consolidating the services formerly provided by 38 home care programs and 36 placement coordination services.

The CCACs provide a simplified service access point and are responsible for:

- determining eligibility for, and buying on behalf of consumers highest quality best priced visiting professional and homemaker services provided at home and in publicly-funded schools,
- determining eligibility for, and authorizing all admissions all long-term care facilities (nursing homes and homes for the aged),
- service planning and case management for each client,
- providing information on and referral to all other long-term care services, including volunteer-based community services.

Access Centres are governed by independent, incorporated non-profit boards of directors. The boards are accountable, through service agreements, to the Ministry of Health. Board membership represents a board mixture of the broader community and a balance of health and social services perspectives. One-third of the board membership must consist of consumers of long-term care services and their caregivers.

Visiting services are health and support services provided in the home on a visitation basis to enable people to:

- remain in their own homes
- to return home more quickly from hospital, or
- to delay or prevent the need for admission to a hospital or long-term care facility

Visiting services may be provided to Ontario residents of any age and anyone can make a referral. The services are 100% funded by the Ontario Ministry of Health and Long-Term Care.

CCACs serve clients by assessing their needs, determining their eligibility, and buying, on their behalf, a range of services. Access Centres purchase services, medical supplies and equipment from non-profit and commercial service providers through a request for proposal process which focuses primarily on service quality and secondarily on price.

The services provided through CCACs include:

- Homemaking
- Nursing
- Physiotherapy
- Occupational Therapy
- Speech-Language Therapy
- Social Work
- Dietetics Services
- Case Management/Coordination
- Medical Supplies & Dressings
- Hospital and Sickroom Equipment
- Laboratory and Diagnostic Services
- Transportation to other health care services
- Eligibility for drug coverage under the Ontario Drug Benefit Plan

Source: www.oaccac.on.ca/functions.php

Dietitians working with CCACs are independent contractors who bill the CCAC they work with per client visit; fees vary depending on travel distances to get to clients' homes. Dietitians designate client priorities; this determines the order/frequency of nutrition consultation (per the following CCAC Codes and Time Periods).

CCAC (Ontario) Codes and Time Periods

Priority A 1-7 days
Priority B 1-14 days
Priority C 1-30 days

Initial Report

Due within one week of initial assessment.

Service Codes			
NutA	Priority A	7 visits/14 wks	Tube feeds
NutB	Priority B	5 visits/12 wks	Adjust TF or wt changes with TF patients
NutC	Priority A	5 visits/15 wks	High risk dysphagia
NutD	Priority B	5 visits/15 wks	Moderate risk dysphagia
NutE	Priority C	5 visits/15 wks	Low risk dysphagia
NutF	Priority B	5 visits/15 wks	Palliative Diabetes (hypoglycemia) >10% wt loss or more in 1 month Wounds Oncology Pre and post surgery
NutG	Priority C	5 visits/12 wks	Liver and kidney disease 10% wt loss in 1 month Bowels (partial obstruction, irritable bowel, comprehension, diverticulosis, constipation, diarrhea) Cardiac diets Frail elderly Degenerative diseases (ALS, MS, Parkinson's, Huntington's, Alzheimer's) Other (celiac, anemias, obesity, GE, reflux, hiatus hernia)

Emergency Codes	
Risk Code 1 No service delay	Tube feeding concerns Recent onset of significant unintentional wt loss resulting in nutrition/hydration risks
Risk Code 2 14 day delay from scheduled visit	Significant low body wt and poor nutrition (unable to maintain nutrition) Gradual onset of unintentional wt loss resulting in nutrition/hydration risks Recurring hypoglycemia
Risk Code 3 30 day delay from scheduled visit	Assessment/f/u and education Unintentional wt loss Other diabetic management issues Nutritional management of GI concerns

Personal communication: Laura West, RD, Sudbury ON

Appendix 6: Dietitian Informants' Descriptions of Efforts to Address the Nutrition Care Gap in BC

Dietitians working in acute care, public health, rehabilitation, and industry settings provided descriptions of their experiences attempting to make arrangements for the nutritional safety for people post-hospitalization in the absence of or with limited access to home-based nutrition services. In many instances, owing to the care gap, dietitians receive telephone calls requesting their involvement in trouble shooting for people who are not clients of the organization. Because they were uncomfortable not helping people at extensive nutritional risk, dietitian informants indicated that they made arrangements for these callers as 'add ons' to their regular duties. Respondents expressed the following concerns:

- they recognized that the people they were asked to assist were 'the tip of the iceberg'; that there were many others also living at nutritional risk. Dietitians wondered how these people could be identified, and how appropriate nutrition services could be provided for them when there was no one else in their community with the mandate to provide them.
- they did not want to put their existing clients at risk by providing services to non-clients.
- they were not comfortable providing bandaid solutions one problem at a time without addressing the larger systemic problem of inadequate or non-existent home-based nutrition services.

Acute Care and Cancer Care Dietitians

Acute care dietitian respondents related the challenges they encounter attempting to arrange home-based nutrition services given that very little exists in BC apart from in Victoria, Burnaby, and minimally to not at all elsewhere. Acute care dietitians attempt to teach clients and/or their family/caregivers while they are still hospitalized about anticipated nutritional needs after discharge. Discharge teaching is provided for those are not expected to be able to maintain adequate oral intake, those on tube feedings, and/or those who require dietary modifications. Decisions about what and when to teach are based on 'best guesses' of what might transpire once home and without adequate knowledge of the home environment. Most clients and caregivers, owing to the stresses of illness and hospitalization are unable to absorb the information provided. When home from hospital, they may telephone acute care dietitians for ongoing nutrition advice and to troubleshoot problems arising. Acute care dietitians described being unable or minimally able to provide 'out of hospital' or 'after discharge' care as their mandate is to attend to the nutritional assessment and care planning of new patients who have subsequently been admitted. This leaves post-discharge clients/caregivers on their own to sort out eating/feeding problems without adequate support or information.

Respondents indicated that where coordinated HCC nutrition services do exist (minimally in BC), discharge planning and transition from hospital to home was efficient and effective reducing strain on clients, families/caregivers, and care staff.

Rehabilitation institution dietitians

Dietitians working in rehabilitation described similar challenges to those experienced by acute care dietitians in attempting to arrange home-based tubefeedings and other nutrition supports for clients transitioning to home after long rehabilitation admissions post accident/stroke, etc. These arrangements are frustrating as they depend on the Rehabilitation Services dietitians maintaining their own records of where there are dietitians providing home-based nutrition services in BC (most often these are fragments of FTEs), knowing that these change constantly. Piecing together access to tube feeding equipment and formulae in varied BC communities is time consuming and inefficient. Very often, clients and/or their families/caregivers require ongoing telephone support post-discharge. After discharge care is not the mandate of the Rehabilitation Services dietitians, nor are they adequately staffed to provide this type of service (as doing so deprives patients in hospital of nutrition services). These dietitians stressed the importance of a coordinated system of home-based nutrition services to ensure the nutritional safety and well-being of their clients and all other British Columbians in need.

Community nutritionists

Dietitians working in public health described the frequent (at least several times a week, if not daily) telephone inquiries they receive from desperate, distraught family members/caregivers for nutrition advice/support. While some public health nutritionists formerly worked in clinical nutrition roles, many have not. Their expertise is in population health/community based nutrition education program development and administration/health promotion and prevention. Where community nutritionists do have clinical experience, they are usually not able to offer the detailed advice that callers seek about medical nutrition therapy owing to lack of familiarity with clients' conditions, and medical and social histories, as well as owing to the liability/risk potential. These situations are frustrating for both callers and nutritionists owing to the limited availability of home-based nutrition services. Public health nutritionists frequently spend hours calling around trying to arrange services to little/no avail as there simply are not services available. In many cases, people struggling at home with maintaining food or tubefeeding intake are readmitted with dehydration and weight loss, both of which are preventable.

Community dietitians

Community dietitians provide medical nutrition therapy for clients in their homes. FTEs of dietitians providing these services are few in BC. In addition, there is no systematic nutrition risk screening program, or referral or reporting mechanisms. Thus, these dietitians tend to be spread thin over large geographic and/or densely populated areas and respond to only the highest risk referrals made from other team members (usually RNs). This approach leaves many people living at nutritional risk without access to services. When budget cuts are required, these fragments of FTEs are often eliminated further putting community members at risk. Community dietitians believe that a systematic means of screening/referral/reporting would ensure that clients are identified and referred effectively. Current staffing is wholly insufficient to meet the needs of British Columbians.

Dietitians working in industry

Dietitians working for nutrition supplement or formula companies reported that clients often telephone them seeking assistance with tubefeeding instruction, maintenance/management, and troubleshooting. The mandate of these dietitian positions is solely to assist clients to access feeding equipment. They are not permitted to provide teaching or nutrition counselling as this is outside of the scope of their positions. There are usually no other dietitians to whom to refer clients. As with the other respondent groups, dietitians working in industry were passionate about the need for a province-wide, coordinated program of nutrition support services to meet the needs of individuals discharged from hospital who required MNT, as well as those who require assistance to manage their nutritional needs without hospitalization.

Appendix 7: Health and Human Service Professionals Who Were Consulted With Interests in Home-based Nutrition Services in BC

Jo Clark, Regional and Vancouver Acute Allied Health Practice Director, Professional Practice
Vancouver Coastal Health

Kate Hildebrandt
BC Care Providers' Association

Michael Leisinger, Acute Care
Northern Health

Ryna Levy-Milne, PhD, RD
Richard Doll, Rehabilitation Professional Practice Leader
BC Cancer Agency

Dianne Miller, Director, Health Promotion and Public Health
Fraser Health

Sheila Pither
Council of Senior Citizens of BC

Susan Ross, MSc, RD, FDC
Interim Director, Dial-a-Dietitian

Sharon Shore
BC Medical Association

Laura Sware, RD/Lisa Kyriacou, RD
BC Home Enteral Program

Karol Traviss, MSc, RD
Dietetics Education Coordinator, UBC

Paul Vieira, Community Administrator, Cranbrook-Kimberley
Interior Health

Appendix 8: Operationalizing the Recommendations for Action

1. Create new dietitian positions for home-based nutrition services to address the urgent care gap ensuring new services are integrated with existing services.
2. Incorporate dietitian positions in community-based primary health care and chronic disease management sites.
3. Further develop Dial-A-Dietitian telehealth services to assess callers' nutritional needs using a valid and reliable screening tool, to provide nutrition information as required, and to make referrals to appropriate services. Dietitians working at the call centre would be accessible to the public and help to fill the gap in rural and remote services. With the aid of a valid and reliable screening tool or referral criteria, they could either provide basic information to address callers' immediate nutrition information needs, or refer callers to appropriate community-based or home-based nutrition services. This would allow the home-base nutrition service dietitians to focus on those clients whose needs go beyond access to information or who are home bound and unable to access community-based nutrition services.
4. Develop and promote a systematic means to screen target populations for nutrition risk using a valid and reliable nutrition risk screening instrument to ensure consistent screening/practice throughout the province. This should include developing a process to include screening as a component of all existing and future home-delivered health services (e.g., nursing care, physiotherapy, occupational therapy, etc.) and promoting nutrition risk screening amongst family physicians and other physicians.
5. Develop and implement a means to link clients with local services and home support agencies (e.g., shopping, food preparation, meal delivery, congregate meals, HCC nursing and other staff, primary health care services, etc.) in association with the expanded Dial-A-Dietitian telehealth services.

Acronymns Used in This Report

AHP	At Home Program
BMI	Body mass index
CLBC	Community Living British Columbia
CP	Cerebral Palsy
DAD	Dial-A-Dietitian
FH	Fraser Health
FTE	Full time equivalent
HCC	Home and Community Care
HNC	Home Nursing Care
HSCL	Health Services for Community Living
IH	Interior Health
MCFD	Ministry of Children and Family Development
MNT	Medical Nutrition Therapy
MOH	Ministry of Health
NOHR	North Okanagan Health Region
NSS	Nursing Support Services
OT	Occupational Therapy
PEG	Percutaneous Endoscopic Gastrostomy
PEM	Protein energy malnutrition
RD	Registered Dietitian
RHA	Regional health authority
VCH	Vancouver Coastal Health
VIHA	Vancouver Island Health Authority

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