

DIETETICS

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Dietetics

INTRODUCTION

A registered dietitian (RD) is a regulated healthcare professional educated to assess, diagnose and manage nutritional problems according to the Nutrition Care Process (Dietitians of Canada [DC], 2018a). The idea that diet plays an important role in disease prevention and management is foundational to dietetics.

Dietitians translate scientific evidence into practical solutions that promote individual and population health, and play a major role in healthcare, industry, government and education (DC, 2018b). Dietitians' broad scope of practice enables them to influence policy development, direct nutrition programs, manage food services and conduct scientific research (DC, 2018b). Irrespective of their work setting, dietitians provide expert advice on human nutrition and diet.

HISTORY OF THE PROFESSION

Dietetics has its roots in 19th-century home economics. Advances in technology and chemistry and the perseverance of home economists have made dietetics the profession it is today.

ROOTS IN HOME ECONOMICS

Home economics is the application of science to the home as a separate field of scientific study. Its founder is Ellen Swallow Richards (1842–1911), who was the first to apply chemistry to the study of nutrition (Mozans, 1913).

With an understanding of the circumstances and structural factors that affect health, home economists advocated on social, economic, political and environmental issues that impact people's well-being (Brady, 2006). They were instrumental in promoting fair wages and safe working conditions for food production and manufacturing workers, and other social justice issues.



CANADA'S FIRST NUTRITION SCIENCES PROGRAM

The first nutrition sciences program started at the University of Toronto's Lillian Massey School of Domestic Science and Art (University of Toronto, 2018). The school was named after philanthropist Lillian Massey Treble, who organized domestic science classes in the 1890s for young Torontonians girls to improve household conditions in nearby neighbourhoods (Lang & Upton, 1973). The school was renamed to the Department of Household Science in 1902, but the building that houses the university's nutrition sciences program still bears Massey Treble's name.

Household science was one of the first departments at the University of Toronto to appoint female professors, including founding principal Dr. Annie L. Laird and organic chemist Dr. Clara Benson.

Dr. Laird played a major role in the development of dietetics. She viewed household science as a "combination of science and art" and helmed the University of Toronto's household science faculty for 34 years. She also advocated for the formation of a national dietetic association in 1935 (Berenbaum, 2005). The Annie L. Laird prize exists in her memory.

Dr. Benson also played an important role in early dietetics. She developed the University of Toronto's food chemistry program, chairing its Department of Food Chemistry from 1926 until 1945 (University of Toronto, 2018).

NUTRITION AND DIETETICS AT UNIVERSITÉ DE MONTRÉAL

In 1942, Université de Montréal introduced a new nutrition and dietetics program within its faculty of medicine (Université de Montréal, n.b). Former University of Toronto professor Mary Doreen Smith was instrumental in the foundation of the program. Professor Rachel Beaudouin played a key role in passing a law in 1956 recognizing dietitians as health professionals in Quebec. Quebec was the first province to adopt such a law. Professor Estelle Mongeau led the graduate-level nutrition programs for two decades and helped develop a doctoral program in nutrition.

DIETITIANS IN MILITARY SERVICE

In 1917, the Military Hospitals Commission asked the Department of Household Science at the University of Toronto to create meal menus that meet nutrition requirements for the military. In 1917, the Military Hospitals Commission hired civilian dietitian Violet M. Ryley to organize the dietary departments in military hospitals (Brownridge & Upton, 1988). Soon after she became a full-time staff member.

Twenty-five military hospitals had dietitians on staff by 1917. It was only until the Second World War that dietitians were permitted to take part in Canada's three military branches. To this day, dietitians continue to contribute to the Canadian military services to this day, including in food service management, research and education.

FORMATION OF THE CANADIAN DIETETIC ASSOCIATION

For years, the American Dietetic Association (ADA) was the only forum available to Canadian dietitians to exchange views, review and compare standards and methods, discuss needs and problems, and learn from the experiences of their peers. The Canadian Dietetic

TABLE 1: Founding dates of provincial dietetics associations

Year	Province/territory
1949	Manitoba
1952	Quebec
1955	Alberta, British Columbia, Nova Scotia, Ontario, Saskatchewan
1956	New Brunswick
1957	Newfoundland and Labrador
1965	Prince Edward Island

Source: Lang & Upton, 1973

Association (CDA) was formed in 1935 to “promote, encourage and improve the status of dietitians in Canada” (Lang & Upton, 1973). In 1936, St. Michael's Hospital in Toronto became the first hospital approved by the CDA to educate dietitians.

In 1996, the CDA was renamed to Dietitians of Canada (DC) and given the mandate to represent dietitians across the country (CDA, 1996). DC exists today as the professional association for Canadian dietitians, with regulatory responsibilities being at the provincial level.

EDUCATION AND TRAINING

Becoming a dietitian requires successfully completing an accredited university degree program in food and nutrition sciences, gaining practical experience through an internship, and successfully completing the Canadian Dietetic Registration Examination (CDRE) (DC, 2018c) or the requirements set out by the *Ordre professionnel des diététistes du Québec* (OPDQ, 2018).

UNDERGRADUATE EDUCATION PROGRAMS IN NUTRITION

The first step to becoming a RD in Canada is to earn a bachelor's degree in food and nutrition from a university program accredited by the Partnership for Dietetics Education and Practice (PDEP).

Program titles differ across universities and the program may be housed in different departments. For example, the Baccalauréat en nutrition at Université de Montréal is part of the Faculty of Medicine, while the University of Ottawa's Baccalauréat spécialisé en sciences de la nutrition falls under the Faculty of Health Sciences.

Along with earning a bachelor's degree in food and nutrition, dietetics students must also gain practical experience through an internship or practicum.

There are three possible pathways to earn this experience:

- An undergraduate program with a fully integrated internship (Path A);
- An undergraduate program with a partially integrated internship (Path B); and
- An undergraduate program followed by a post-degree internship or practicum (Path C).

Graduates of Path B and Path C programs who wish to pursue dietetics can apply to a graduate internship program. In the case of Path B programs, the same university may offer an internship program or a combined master's practicum program. Other post-degree internships are offered through institutions such as hospitals and health science centres.

ABOUT THE PARTNERSHIP FOR DIETETICS EDUCATION AND PRACTICE (PDEP, WWW.PDEP.CA)

Canadian dietetic regulatory bodies, DC, and dietetic educators from academic and practicum programs formed PDEP to drive excellence in the field (PDEP, 2018). PDEP has three important functions:

- Create a common vision for education and practice to inform future joint initiatives;
- Develop, monitor as well as maintain the currency of the integrated competencies for dietetic education and practice; and
- Implement accreditation standards using a collaborative structure and processes (PDEP, 2018).

These opportunities are available in various Canadian cities, including Moncton, Toronto and Winnipeg.

Table 2 provides an overview of undergraduate dietetic and nutrition sciences programs available in Canada. Up-to-date information about all accredited programs, including combined master's practicum programs can be found at www.pdep.ca.

Admissions

Admission requirements for nutrition and food science undergraduate programs vary by university. Most programs require high school or Cegep (Collège d'enseignement général et professionnel) credits in biology, chemistry and mathematics. Generally, Grade 11 and Grade 12 marks are evaluated when an applicant's academic standing is assessed for admission. Most programs require a minimum average of 75–80%.

At the University of Saskatchewan, students admitted must first complete a preparatory year of university courses in the basic sciences before entering the four-year Bachelor of Science in Nutrition program.

General curriculum

Students in undergraduate food and nutrition programs first take foundational courses in biology, chemistry, biochemistry, anatomy and physiology, as well as courses in food sciences, research methods, nutrition through the lifespan, psychology and sociology of health. In later years, students must complete courses in clinical nutrition, metabolism, community nutrition, population and public health, foodservice management and functional foods, among others.

Path A: Undergraduate academic education programs with a fully integrated internship

These academic education programs with practicum training completely prepare students to write the CDRE, which would allow them to practice as a RD after successfully completing the exam and registering with a provincial dietetic regulatory authority.

Path B: Undergraduate academic education program with a partially integrated internship

Path B programs provide academic dietetic education and some practicum training preparation through the four years of study, but additional training may be required post-graduation if the requirements of an accredited internship have not been met.

TABLE 2: Canadian undergraduate educational programs in dietetics and nutrition sciences¹

School	Path	Language of Instruction	Degree acquired	Duration (years)
Prince Edward Island				
University of PEI	B	E	Bachelor of Science (Foods and Nutrition)	4.5
Nova Scotia				
Acadia University	B	E	Bachelor of Science in Nutrition (Dietetics option)	4
Mount St. Vincent University	B	E	Bachelor of Science in Applied Human Nutrition (Dietetics)	4
St. Francis Xavier University	B	E	Bachelor of Science in Human Nutrition	4
New Brunswick				
Université de Moncton	A	F	Baccalauréat ès sciences en nutrition	5
Quebec				
McGill University	A	E	Bachelor of Science in Nutrition, Dietetics Major	3.5
Université de Montréal	A	F	Baccalauréat ès sciences en nutrition	3.5
Université Laval	A	F	Baccalauréat en nutrition (B.Sc.)	3.5
Ontario				
Brescia University College	C	E	Bachelor of Science, Honors Specialization in Nutrition and Dietetics	4
Ryerson University	C	E	Nutrition and Food Bachelor of Applied Science	4
University of Guelph	C	E	Bachelor of Applied Science in Human Nutrition	4
Université d'Ottawa	A	F	Baccalauréat spécialisé en sciences de la nutrition	4
Manitoba				
University of Manitoba	C	E	Bachelor of Science in Human Nutritional Sciences	4
Saskatchewan				
University of Saskatchewan	A	E	Bachelor of Science in Nutrition	4*
Alberta				
University of Alberta	A	E	Bachelor of Science in Nutrition and Food Sciences, Dietetics Specialization	4
British Columbia				
University of British Columbia	A	E	Bachelor of Food, Nutrition and Health (BSc), Dietetics Major	4

* These years do not include the one to two years of university-level studies required prior to admission to the program. At the University of Saskatchewan, students cannot begin the program directly from high school.

¹ This information was updated in April 2019. For more up to date information, please refer to the PDEP website at www.pdedp.ca.

Path C: Undergraduate academic education programs only (no internship)

Programs that fall under Path C provide the relevant academic curriculum but do not include any means of practice training through internships. Students must apply for a post-graduate internship to gain practical dietetic experience; these internship programs can be quite competitive (Atkins & Gingras, 2009).

ENTRY INTO PRACTICE

Dietetic graduates who plan to work as a dietitian must successfully complete the CDRE or OPDQ requirements. The Integrated Competencies for Dietetic Education and Practice (ICDEP) are delivered through accredited education programs and evaluated by the CDRE. These dietetic competencies were developed to ensure safe, effective and ethical entry-level practice (ICDEP, 2013).

The CDRE evaluates dietetic students on the main areas of practice set by PDEP, as outlined in the ICDEP (PDEP, 2013). These areas are:

- Professional practice;
- Communication and collaboration;
- Nutrition care;
- Population and public health; and
- Management.

GRADUATE EDUCATION PROGRAMS IN NUTRITION

Combined master's practicum programs provide PDEP-accredited masters academic education with practicum training, which prepare graduates to meet the requirements of OPDQ or to write the CDRE.

Furthermore, some universities also offer master's or doctorate degree programs in nutrition. Dietitians may continue their studies in nutrition or choose another field such as health promotion, public health or counselling. Universities that offer a Master of Science in nutrition or applied human nutrition include the University of Guelph, McGill University, University of British Columbia, University of Manitoba, University of Alberta, Ryerson University, University of Saskatchewan, University of Toronto, Brescia University College at Western University, Université Laval and Université de Montréal.

Doctoral programs in nutrition are offered at the Universities of British Columbia, Alberta, Saskatchewan, Guelph, Manitoba and Toronto, as well as universities in Québec including McGill University, Université de Montréal and Université Laval.

INTERNATIONALLY EDUCATED DIETITIANS

Dietitians trained outside Canada must meet both academic and internship/practicum requirements to be licensed for practice in Canada. Individuals who do not meet the academic requirements will need to apply for one of the programs offered across the country. Those who do not meet the internship/practicum requirements can apply for programs specifically designed to meet this requirement.

The Internationally Educated Dietitians Pre-registration Program offered by Ryerson University provides clinical training to internationally educated dietitians. It is designed to prepare internationally trained dietetic students to meet the requirements for membership with a provincial regulatory authority.

REGULATION OF THE PROFESSION

Dietitians are regulated in all 10 provinces but as of 2018, they are no longer regulated in the territories (CIHI, 2018). This is different from other regulated healthcare professions where both a regulatory authority and an association exist at the provincial/territorial level. Additionally, the regulatory bodies are fairly homogenous regarding the professionals' registered title, with most provinces using either "dietitian" or "registered dietitian."

Table 3 shows Canada's provincial-level dietetic regulatory bodies and the year dietetics became a regulated profession in that jurisdiction.

PROTECTED TITLES

The titles "Registered Dietitian," "Professional Dietitian" and "Dietitian" are protected across Canada, just like the titles for physicians, nurses and pharmacists. Dietitians may also use the titles "*diététiste*," "*diététicien*" or "*nutritionniste*" if they are Francophone or working in a French-speaking province or community. The use of regulated titles within a jurisdiction suggests that the individual has the requisite high-quality education, knowledge and skills for dietetic practice, and is registered with the provincial regulatory authority.

TABLE 3: Dietetic regulatory bodies by province

Year	Province	Regulatory authority
1956	Quebec	Ordre professionnel des diététistes du Québec
1958	Saskatchewan	Saskatchewan Dietitian Association
1965	Newfoundland and Labrador	Newfoundland and Labrador College of Dietitians
1982	Manitoba	College of Dietitians of Manitoba
1988	New Brunswick	New Brunswick Association of Dietitians
1994	Ontario	College of Dietitians of Ontario
1994	Prince Edward Island	Prince Edward Island Dietitians Registration Board
1998	Nova Scotia	Nova Scotia Dietetic Association
2000	Alberta	College of Dietitians of Alberta
2004	British Columbia	College of Dietitians of British Columbia

Source: CIHI, 2016b

TABLE 4: Protected titles by jurisdiction

Province	Titles and initials protected through provincial regulation
British Columbia	Registered Dietitian, Dietitian, RD
Alberta	Registered Dietitian, Dietitian, Registered Nutritionist, Nutritionist, RD Dietetic Intern, Provisional Dietitian
Saskatchewan	Registered Dietitian, Dietitian, Professional Dietitian, RD, P.Dt
Manitoba	Registered Dietitian, Dietitian, RD
Ontario	<i>English:</i> Registered Dietitian, Dietitian, RD <i>French:</i> diététiste professionnel(le), Dt.P
Quebec	<i>English:</i> Dietitian, Nutritionist, RD, P.Dt <i>French:</i> diététiste, nutritionniste, diététicien(ne), Dt.P
New Brunswick	<i>English:</i> Dietitian, Dietician, Professional Dietitian, Registered Dietitian – Nutritionist, Registered Dietitian, P.Dt., RD, RDN <i>French:</i> diététiste, diététicien(ne), diététiste professionnel(le), diététicienne professionnel(le), diététiste-nutritionniste, diététicien(ne)-nutritionniste immatriculé(e), diététiste immatriculé(e), diététicienne immatriculé(e), Dt.P., Dt.I, Dt.N.I
Nova Scotia	Dietitian, Nutritionist, P.Dt
Prince Edward Island	Registered Dietitian, RD
Newfoundland and Labrador	Registered Dietitian, Dietitian, RD

Source: Dietitians of Canada, 2018d

Dietitians are accountable to provincial regulatory bodies for the highest standards of education and ethics. Those who seek the services of a dietitian should look for the credential “RD” or “P.Dt” (“Dt.P”

in French). Table 4 outlines the protected titles in Canada’s jurisdictions. Dietitians who work in the territories must join a provincial regulatory authority.

Difference between a dietitian and a nutritionist

While the title “registered dietitian” is protected across Canada, the title “nutritionist” is only protected in Alberta, Quebec and Nova Scotia (DC, 2018d). That means anyone may call themselves a nutritionist in jurisdictions where it is not regulated, making it difficult to ensure those who do so are properly trained and credentialed.

Titles such as Registered Holistic Nutritionist (RHN), Certified Nutritional Practitioner (CNP), Registered Nutritional Consulting Practitioner (RNCP), Natural Nutrition – Certified Practitioner (NNCP) and other “nutritionist” designations are often used by people who have completed privately owned training programs that vary in length and rigour. These titles do not indicate that the individual is a provincially regulated health professional (DC, 2018d).

SCOPE OF PRACTICE

At the provincial and territorial levels, the Health Professions Act states the scope of practice that broadly describes and educates the public about the focus of a health profession. In Ontario, for example, section 3 of the [*Dietetics Act, 1991*](#) articulates the scope of practice for dietitians as “the assessment of nutrition and nutritional conditions and the treatment and prevention of nutrition related disorders by nutritional means.”

Because health professionals are regulated at the provincial level, the official statement on dietetics scope of practice varies by province—meaning there is no single definition that captures the scope of dietetics in Canada (Selinger & Berenbaum, 2015). The Academy of Nutrition and Dietetics ([AND], 2017) underscores the variety of roles that dietitians can assume in different settings while working within their scope of practice.

Generally, dietetics practice includes the interpretation and application of scientific knowledge in nutrition research for the purposes of attainment, maintenance and promotion of health in individuals, groups and communities (DC, 2018b). Using an evidence-based practice approach, dietitians are actively involved in

nutrition screening for under- or over-nutrition, as well as the management of diet and health for people with various medical conditions. These include a myriad of conditions such as premature birth, food allergies and intolerances, eating disorders, at-risk pregnancies, obesity, heart disease, cancers and renal disease.

Evidence-based practice integrates three principles that call for the use of:

- The best available research evidence;
- Clinical expertise, judgment and experience; and
- Clients’ or patients’ preferences, values and circumstances.

To achieve the best possible patient or client outcomes, dietitians often collaborate with other health professionals, including physicians, nurses, social workers, physiotherapists and speech-language pathologists.

Dietitians also play a major role in and contribute to:

- Primary healthcare settings, providing individualized nutrition counselling to patients and promoting healthy eating to prevent chronic diseases;
- Hospital settings, providing medical nutrition therapy (including parenteral and enteral nutrition) to patients of all ages with various medical conditions;
- Policy development for population-level strategies to promote healthy eating;
- Nutrition program design and development at the community or population level;
- Evaluation of food products and education about food skills;
- Quality management of food services for nutritional care and patient satisfaction; and
- Research to inform policies, develop and validate dietary assessment tools, provide quality food-service systems, and prevent and manage nutrition-related acute or chronic illness.

MODELS OF PRACTICE

The Nutrition Care Process (NCP) is a systematic approach to providing high-quality nutrition care by dietitians (AND, 2018). It consists of four distinct and interrelated steps:

1. *Nutrition assessment:* The dietitian collects information such as food or nutrition-related history, biochemical data, medical tests and procedures, anthropometric and body composition measurements, nutrition-focused physical findings and client history.
2. *Nutrition diagnosis:* The dietitian makes one or more nutrition diagnoses based on the assessment information.
3. *Intervention:* The dietitian selects appropriate nutrition interventions based on the root cause (etiology) of the nutrition problem(s), aimed at alleviating the signs and symptoms of the diagnosis.
4. *Monitoring/evaluation:* The dietitian monitors nutrition indicators and determines if the patient/client has achieved or is making progress toward the planned nutrition management goals over time.

FOOD INSECURITY IN CANADA

“Food insecurity” is the state of being without reliable access to a sufficient quantity of affordable and nutritious foods. Household food insecurity is important to address, as it has been linked to nutrient inadequacies in Canadian adults and adolescents (Kirkpatrick & Tarasuk, 2008).

From 2011 to 2012, 2.19 million people in Canada aged 12 or older lived in food-insecure households—1,595,000 in households with moderate food insecurity and 595,200 in households with severe food insecurity (Government of Canada, 2017). This is concerning because people experiencing food insecurity tend to incur significantly higher healthcare costs than those who are not (Fitzpatrick et al., 2014; Rosella et al., 2014).

The prevalence of food insecurity was higher in low-income, Indigenous and immigrant households, in households with children, and in urban areas (8.7%) compared to rural areas (6.6%) (Government of Canada, 2017). Food insecurity was higher than the national average in Nova Scotia, New Brunswick and all the territories (Government of Canada, 2017).

Data suggests the prevalence of food insecurity decreased from 2000–01 (14.7%) to 2011–12 (8.4%) (Ledrou & Gervais, 2005; Government of Canada, 2017). Nevertheless, food insecurity remains a pervasive issue that should be addressed by various stakeholders. A DC position paper (2016a) highlights the importance of:

- Developing and implementing a pan-Canadian, government-led strategy to ensure households have sufficient income to pay for basic needs such as food;
- Implementing a federally-supported strategy to address the additional and unique challenges faced by First Nation, northern and remote communities;
- Committing to mandatory reporting of the prevalence of food insecurity and its severity; and
- Supporting continued research to address gaps in knowledge about populations experiencing greater prevalence and severity of household food insecurity.

Although the process seems linear, dietitians may revisit previous steps of the process to reassess, add or revise nutrition diagnoses, modify interventions, or adjust goals and monitoring parameters as they obtain new information (AND, 2018). The NCP also considers influences of the practice setting, health-care system, social system and economics.

At the core of the NCP is the relationship between the patient or client and the dietitian. Dietitians complete the NCP using standardized language known as the International Dietetics and Nutrition Terminology (IDNT). The NCP and IDNT support continuous quality improvement through an outcomes management system and by emphasizing evidence-based practice (Atkins, Basualdo-Hammond, & Hotson, 2010). It allows for dietitians to use a consistent and individualized approach to nutrition care and highlight their contribution to client outcomes (Atkins et al., 2010). The electronic Nutrition Care Process Terminology is a comprehensive guide for implementing the NCP using standardized language (AND, 2018).

Within the NCP, dietitians can use various models such as the Model of Multicultural Nutrition Counselling and Competencies (Harris-Davis & Haughton, 2000), which addresses the importance

of culturally sensitive practice—particularly relevant in Western clinical practice where multiculturalism is a significant population characteristic. Another prominent technique used by dietitians is motivational interviewing, which draws from the motivation-based model (Rollnick, Miller, & Butler, 2008). Motivational interviewing suggests that a patient’s viewpoint is malleable and can be oriented into a different direction rather than rigidly holding on to a single perspective. Motivational interviewing relies on a clinician’s reflective listening skills and emphasizes working with patients.

DEMOGRAPHICS

DIETITIANS BY PROVINCE

The number of dietitians has been steadily increasing from 2008 to 2017 (see Table 5). In 2017, the Canadian Institute for Health Innovation (CIHI) reported that there were 11,925 RDs in Canada (CIHI, 2019).

CIHI data are depicted in Figure 1, which shows that the number of dietitians has been increasing in all provinces but at different rates (CIHI, 2019). The territories and Alberta have the highest number of dietitians per capita.

Figure 1: Number of dietitians by province, 2008–2017

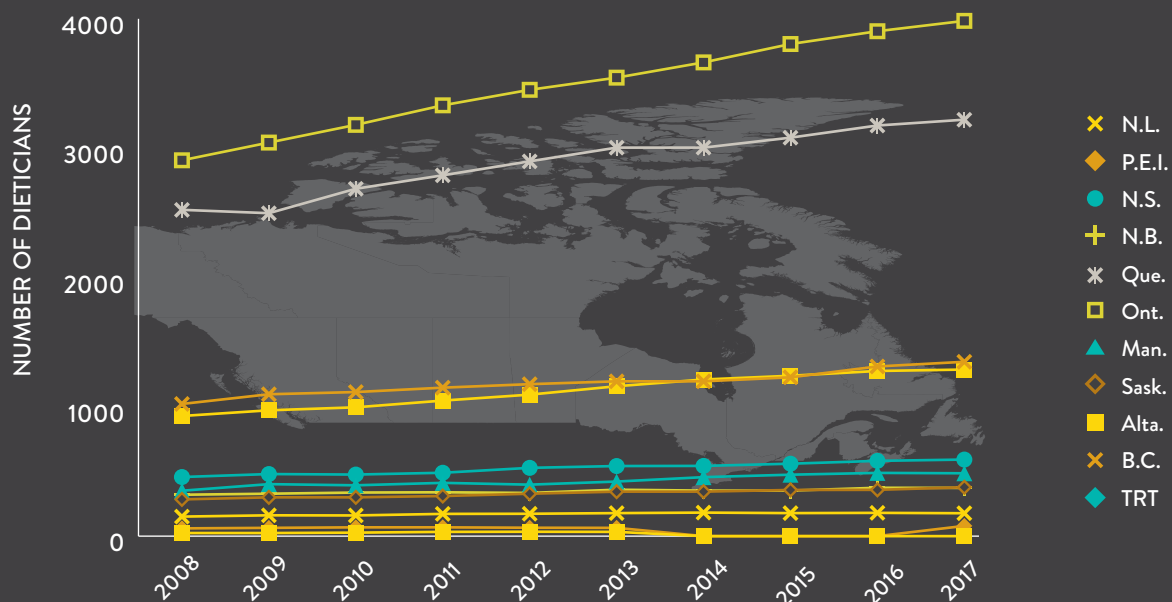


TABLE 5: Number of dietitians in Canada, 2014–2016

Year	Count	Per 100,000 people
2008	9,027	27
2013	10,847	31
2017	11,925	33

Source: CIHI, 2019

DIETITIANS BY GENDER AND AGE GROUP

The vast majority of dietitians are female, with 2017 estimates showing that the profession was 96.9% female (CIHI, 2019).

CIHI data on the age distribution of RDs for eight Canadian provinces in 2009 shows a slight variation across each province. The majority of working dietitians are those in the early- and mid-life age range: 25–54 years of age. The proportions of practicing dietitians vary within this wide range, however. In Newfoundland and Labrador, for example, there is an equal number of dietitians aged 25–34 and aged 35–44; in Prince Edward Island, the two age groups have a difference of 12%, with more being in the 35–44 age group.

DIETITIAN SUPPLY AND DEMAND IN CANADA

The current supply of dietitians in Canada is inadequate to meet demand, especially in remote and rural areas (DC, 2016b). In 2011, it was noted that half of Canada’s dietetic workforce plans to retire within the following 10 years (DC, 2011). This shortage of dietitians, as well as the emergence of unregulated nutrition practitioners in Canada suggests that many Canadians lack access to credible nutrition information.

It is essential to educate enough dietitians to meet the health needs of Canadians, which requires workforce planning. DC is working with partners, including dietetic educators, to study the dietetic workforce provincially and nationally.

In a 2012 submission to the Standing Committee on Human Resources, Skills and Social Development and the Status of Persons with Disabilities (DC, 2012), DC proposed four recommendations to address the dietitian workforce shortage:

- Improve and increase training capacity in accredited university and practicum programs;
- Improve workforce mobility through bridging programs for internationally educated dietitians;
- Increase participation of aboriginal populations in dietetics training; and
- Improve support for collection of labour market information for dietitians.

Given that language barriers between patients and providers can negatively affect quality of care, emphasis should be given to training dietitians with multicultural and multilingual backgrounds (Schyve, 2007). The *Consortium national de formation en santé* highlights the need for more dietitians who can actively offer services in French to French minority populations (Drolet, Bouchard, & Savard, 2017).

PRACTICE SETTINGS

Dietitians work in a wide variety of settings, including educational institutions, public and community health services, long-term inpatient care facilities, government departments, hospitals, sports centers and in private practice. Notably, a setting in which there has been an increase in dietitians is primary care. Due to the increased prevalence of chronic diseases, the primary healthcare reform aimed to move towards multidisciplinary primary healthcare settings, which in turn, led to an increase in dietitians working in these models of care (Government of Canada, 2007). This reform has given rise to interdisciplinary teams, which involve various health professionals working together toward

WORKING AS A REGISTERED DIETITIAN FOR CORRECTIONAL SERVICE CANADA

When considering places where RDs work, prisons might not come immediately to mind. However, most correctional institutions will have a RD on staff or have a consulting RD available to see inmates.

The RD's work in a correctional setting is twofold. One part is clinical, where the RD provides education and counselling to inmates on healthy eating as it relates to their medical conditions. The second part is administrative and includes menu planning, nutrition policy application and food service management. As part of their role, the RD is often called on to liaise between health services and food services to establish acceptable food practices.

In a correctional setting, the RD must consider multiple conflicting priorities around security, budgetary restrictions and prisoner well-being. This requires distinct personal skills, including the ability to communicate and negotiate effectively. For example, dietitians need to work with inmates to develop a meal plan that will be acceptable to the inmate while meeting the prison's strict security constraints. That meal plan also has to be feasible for food services, which are often tasked with feeding as many as 500 inmates on a per diem of about \$5 per person.

the common goal of supporting patient health through the management and prevention of chronic diseases. As members of interdisciplinary teams, RDs support the nutrition care practices of primary care providers such as nurse practitioners and family physicians (Aboueid, Bourgeault, & Giroux, 2018a). It was found that primary care providers working in a multidisciplinary care setting where a dietitian is present may be more likely to provide a dietetic referral due to the available cost-free dietetic service on site (Aboueid, Bourgeault, & Giroux, 2018b; Wynn et al., 2010).

Dietitians also work in settings that provide care to Indigenous populations in Canada. Dietetics education highlights the importance of cultural competency to effectively adapt services and provide care across various cultures. In particular, the Northern Ontario Dietetic Internship Program (NODIP) is a fully accredited 46-week internship that prepares students annually for practice in Indigenous communities (Northern Ontario School of Medicine, n.b). Dietitians are educated to work collaboratively with Indigenous communities while applying holistic prevention and promotion strategies. They also develop culturally appropriate nutrition education resources that promotes respect to traditional

knowledge, values and health practices (Dietitians of Canada, 2014). In addition, dietitians working with Indigenous populations have rated Indigenous health to be important for developing cultural competencies (Paige, Jillian, & Lee, 2017).

COVERAGE OF SERVICES AND REMUNERATION

Dietitian services have been shown to be effective for managing and preventing various chronic diseases such as type 2 diabetes (AND, 2018; Flodgren et al., 2010; Knowler et al., 2002; Parker et al., 2014; Tol et al., 2014; Willaing et al., 2004). Despite their demonstrated effectiveness, the increase in nutrition-related chronic diseases and associated healthcare costs, dietitian services are not publicly funded.

While many Canadian workers receive health insurance from their employers, not all health plans cover the cost of dietitian services (DC, 2017a). For instance, Canada's Public Service Health Care Plan—which is Canada's largest health insurance plan—covers a wide variety of healthcare services (e.g., physiotherapy, massage therapy, psychology) but not dietetics services (Freedhoff, 2014).

This lack of public funding and limited coverage across health plans are significant issues due to the benefits dietetics services can offer from both a quality-of-life and an economic point of view. For quality of life, nutrition counselling can reduce the risk of developing type 2 diabetes by up to 60% in at-risk individuals (DC, 2017b). From an economic standpoint, dietetic interventions can reduce health-related lost productivity by 64% and decrease an employee's disability days by 87% (DC, 2017c).

SALARY

A RD's income in Canada depends on level of experience, funds and resources of their employer, and the type of work. Geographic location is also a factor and is influenced by provincial economies and rural or remote allowances. In addition to salary, many full-time dietitians receive health and dental benefits, paid sick days and paid vacations, although this depends on the employer. As dietitians progress through their careers, they gain experience and skills that enable them to increase their earning potential in areas such as management and higher education. The salary of dietitians working in private practice can vary substantially.

Table 6 shows the hourly median wage for RDs by province in 2018.

TABLE 6: Median wage for registered dietitians by province

Jurisdiction	Median wage per hour (\$)
Canada	36.06
Newfoundland and Labrador	36.50
Prince Edward Island	35.16
Nova Scotia	36.50
New Brunswick	36.50
Quebec	27.62
Ontario	36.00
Manitoba	32.12
Saskatchewan	38.29
Alberta	44.93
British Columbia	36.49
Yukon	Unavailable
Northwest Territories	Unavailable
Nunavut	Unavailable

Source: Government of Canada, 2018

NUTRITION SUPPORT

Everyone needs food to survive—but some people may not be able to consume food through the mouth due to surgery of the throat, cancer of the throat, issues with food absorption through the gastrointestinal tract or other medical complications. In these cases, nutrition can be delivered through a feeding tube (enteral nutrition) or through intravenous administration (parenteral nutrition).

Dietitians play an important nutrition support role in intensive care units. They are educated in parenteral and enteral nutrition and may train further by completing DC's Critical Care Nutrition Program (DC, 2018e) or earning a Nutrition Support Certification offered by the American Society for Parenteral and Enteral Nutrition (ASPEN, 2018). Dietitians are educated in determining the amount of carbohydrates, lipids, proteins and other nutrients needed for each patient depending on their medical condition and overall health.

THE ABORIGINAL NUTRITION NETWORK AND THE TRUTH AND RECONCILIATION COMMISSION (TRC) OF CANADA: CALLS TO ACTION

Given that Indigenous communities face many challenges such as higher rates of food insecurity and chronic diseases, Dietitians of Canada established the Aboriginal Nutrition Network (ANN) in 2011 (Dietitians of Canada, 2019). This network is a professional practice that was created by Indigenous peoples with background in nutrition and health. The network is comprised of more than 20 members, most of which are Indigenous or have Indigenous roots. The members strive in achieving many functions such as furthering the development of dietetic training opportunities that focus on Indigenous nutrition and raising awareness of the nutrition needs of Indigenous populations. Dietitians of Canada and the Aboriginal Nutrition Network support the Truth and Reconciliation Commission: Calls to Action to increase the number of Aboriginal professionals working in the healthcare field. In collaboration with the National Aboriginal Diabetic Association (NADA), Dietitians of Canada and the ANN, produced a 2018 calendar showcasing First Nations dietitians and students and sharing recipes based on traditional/original teachings (NADA and ANN, 2018). Dietitians of Canada also held programs to inform dietitians on the TRC of Canada Calls to action and to provide the perspectives of First Nations members on food, nutrition, health and their experiences in participatory research (Dietitians of Canada, 2019).

CONCLUSION

From its humble beginnings in 19th-century Toronto, dietetics has developed into an important and multi-faceted field of scientific study and evidence-based practice. Today, dietetics is a prominent and growing profession in Canada with tremendous potential to improve the health and lives of those who need nutritional guidance. The nutrition care process used by these clinicians is a standardized and internationally recognized approach.

With a strong university education in science, health, food and nutrition, and competencies in a wide array of practice areas, dietitians are the true nutrition experts in Canada. Dietitians are assets to healthcare teams and are in high demand. Their competencies, which include nutrition care, management, and

population and public health, allow dietitians to work in a large variety of professional settings and gives them flexibility and options throughout their career. There are multiple opportunities for dietitians in private practice, communications, business/management, advocacy/leadership, education, law, industry and other emerging areas.

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ACRONYMS

ADA	American Dietetic Association
AND	Academy of Nutrition and Dietetics
ANN	Aboriginal Nutrition Network
CDA	Canadian Dietetic Association
CDRE	Canadian Dietetic Registration Examination
CIHI	Canadian Institute for Health Information
DC	Dietitians of Canada
Dt.P.	Diététiste professionnel
ICDEP	Integrated Competencies for Dietetic Education and Practice
IDNT	International Dietetics and Nutrition Terminology
NADA	National Aboriginal Diabetic Association
NCP	Nutrition Care Process
OPDQ	Ordre professionnel des diététistes du Québec
PDEP	Partnership for Dietetic Education and Practice

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