Teaching Future Dietitians Leadership:
A General Needs Assessment

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The needs of the patient population are characterized by more chronic or complex health problems and the health care delivery system is constantly undergoing transformation. While discussions among stakeholders about changing the health system are essential, there is a concurrent need to focus on health professions education. There is a need to understand how entry-to-practice standards are used to develop health professions curricula. Based on recent stakeholder consultations and workforce assessments conducted by Dietitians of Canada and provincial interest groups, an emerging area of dietetic competency appears to be leadership. The purpose of this research project was to gain a better understanding around how competency standards are utilized to develop health professions curriculum, with a focus on dietetic curriculum related to management and leadership. To meet this objective, a general needs assessment was conducted using five databases: CINAHL, PubMed, FSTA, Scopus, and ERIC. The ancestry method was incorporated with purposive sampled articles to find additional research articles. The following key terms were included in the search: *health professions*, *dietetics*, *nutrition*, *management*, *leadership*, *education*, *curriculum*, *competency*, *entry-level*. A review of the literature indicates that developing professional competencies in leadership can strengthen some health professionals' capacity to take on certain roles through competency-based education. In addition, the long-term training effects result in an increase in specific competencies relevant for effective interprofessional collaboration. There is opportunity for pedagogical and practice-based activities to strengthen leadership abilities of future dietetic professionals.

Keywords: *leadership, dietetics, competency-based, health professions education, needs assessment*

Au sein d'un système de prestation de soins de santé en constante transformation, les besoins de la population de patients sont caractérisés par des problèmes de santé de plus en plus chroniques ou complexes. Bien que les discussions entre les parties prenantes sur la modification du système de santé soient essentielles, il est également nécessaire de réfléchir à la formation des professionnels de la santé. Il est nécessaire de comprendre la manière dont les normes d'accès à la profession sont utilisées pour élaborer les programmes d'études des professions de la santé. D'après les récentes consultations auprès des intervenants et les évaluations de la main-d'œuvre menées tant par les diététistes du Canada que par des

groupes d'intérêt à l'échelle provinciale, un domaine émergent de compétence en diététique semble être le leadership. Le but de ce projet de recherche était de mieux comprendre le processus par lequel les normes de compétences sont utilisées pour élaborer le programme de formation des professions de la santé, en mettant l'accent sur les programmes de diététique liés à la gestion et au leadership. Pour atteindre cet objectif, une évaluation générale des besoins a été réalisée à l'aide de cinq bases de données: CINAHL, PubMed, FSTA, Scopus et ERIC. La méthode d'ascendance a été utilisée de manière à procéder à une sélection plus approfondie d'articles de recherche supplémentaires. Les termes clés suivants ont été inclus dans les moteurs de recherche: *professions de la santé*, *diététique*, *nutrition*, *gestion*, *leadership*, *éducation*, *programme d'études*, *compétences*, *niveau débutant*. Notre revue de la littérature indique que la capacité de certains professionnels de la santé à assumer des rôles de leadership est renforcée par de la formation axée sur le développement de compétences professionnelles en leadership. En outre, les effets de la formation à long terme reliée au leadership se traduisent par une augmentation des compétences spécifiques utiles pour une collaboration interprofessionnelle efficace. Dès lors se révèle le potentiel des activités pédagogiques axées sur la pratique afin de permettre le développement des capacités de leadership chez les futurs professionnels de la diététique.

Mots-clés : *leadership, diététique, approche par compétence, éducation aux soins de santé, évaluation des besoins*

This paper argues that health professionals training must be reimagined and updated significantly to meet the needs of a changing patient population that has more chronic or complex health problems and to thrive in a health care delivery system that is characterized by ongoing transformation. Development of a coordinated, efficient, and effective multidisciplinary healthcare system requires a combination of evidence-based strategies and reliable workforce data to ensure that health professionals can work together in the interest of improved patient outcomes (Solomon, Graves, & Catherwood, 2015). However, substantive evidence about some health professions is sporadic at best, and thus insufficient to support the development of a multidisciplinary healthcare system (Solomon et al., 2015). Without coordinated policies there is a risk of health care workforce shortages that may produce unwanted public health consequences (Solomon et al., 2015). While conversations among stakeholders about changing the health system are essential to influence policy, there is a concurrent need to focus on the content and pedagogy of health professions education (HPE; Thibault, 2013).

A registered dietitian (RD) is part of the health workforce known as *allied health professions*. Allied health is typically used to describe the health workforce as distinct from physicians, nurses, pharmacists, and dentists, although the field lacks a single definition (Elwood, 2013). Dietetics is a regulated health profession in Canada, governed under the *Regulated Health Professions Act, 1991* and health professions *Acts*. RDs are health care professionals who are trained to provide advice and counselling about diet, food and nutrition. They use the best available evidence coupled with good judgment about the client's or communities' unique values and circumstances to determine guidance and recommendations[1]. As the political and funding environment continues to stress the importance of evidence-based practices, key stakeholders are recognizing the need to facilitate collective engagement and set priorities for action with respect to HPE, including dietetics (Dietitians of Canada, 2016; Thibault, 2013). RDs must successfully meet academic requirements, complete supervised practice experience through accredited programs, and pass the provincial/national dietitian registration exam. To maintain the RD credential, dietitians must comply with the continuing competency program outlined by provincial regulatory agencies[2].

There is a need to understand how entry-to-practice standards, such as the Integrated Competencies of Dietetic Education and Practice (ICDEP) (Partnership for Dietetic Education and Practice [PDEP], 2013), are used to develop health professions curricula. In Canada, the ICDEP is the source of dietetic competencies which dietetic programs reference to develop their programs' curriculum. Currently, there are five dietetic competency areas (PDEP, 2013):

1. Professional Practice – Demonstrate professionalism.
2. Communication and Collaboration – Communicate effectively and practice collaboratively.
3. Nutrition Care – Provide services to meet the nutrition care needs of individuals.
4. Population and Public Health – Promote the nutrition health of groups, communities and populations.
5. Management – Manage programs, projects and services related to dietetics.

Based on recent stakeholder consultations and a workforce assessment conducted by Dietitians of Canada and provincial interest groups, there is anecdotal evidence that an emerging area of dietetic competencies is in *leadership*. The purpose of this paper is to

[1] Dietitians of Canada: https://www.dietitians.ca/Become-a-Dietitian/What-Does-a-Dietitian-Do.aspx
[2] For example, in Ontario, Canada: https://www.collegeofdietitians.org/programs/quality-assurance.aspx

identify and discuss a potential problem or learning gap in the education of health professionals, particularly around this emerging area of leadership. By utilizing the general needs assessment framework suggested by Thomas, Kern, Hughes, and Chen (2016), this inquiry will help the dietetic profession to develop a better understanding of how dietetic curricula currently meet the proposed new competencies. For example, Gregoire, Sames, Dowling, and Lafferty (2005) found that dietitians were not perceived by some senior healthcare executives to be highly competent in some of the leadership and operations management skills that were identified. This is a concern given that *management* is a competency area under the current ICDEP.

As a RD for over 12 years who has worked in various healthcare management roles, I find it surprising how few dietitians work in senior leadership roles outside of nutrition. For this paper, as the sole researcher and analyst, I present preliminary findings that help form the relationship between competency-based education (CBE), dietetics, and leadership development. In order to provide context for the general needs assessment, I first provide a brief background on what CBE is, as well as offer a working definition of *leadership*. To conduct the needs assessment, I review and discuss the literature related to dietetics education and leadership. Currently the ICDEP indicators related to leadership are embedded in other competency areas, such as Professional Practice, Communication and Collaboration, and Management. I conclude by recommending strategies to develop leadership abilities of future dietetic professionals.

Competency-Based Education in the Health Care Context

Within the context of health care, competence is integral to the delivery of safe, quality health care and other services that regulated health professionals provide (Academy of Nutrition and Dietetics [AND], 2013). Professional competence can evolve over time as health professions integrate new developments into clinical practice, expanding the body of knowledge and skills for each profession (Dower, Moore, & Langerlier, 2013; Takahashi, Nayer, & St. Armant, 2017). Competence to perform designated activities within defined practice settings is an essential element of health professionals' scopes of practice (AND, 2013; Bourgeault & Merritt, 2015). Some argue that attainment of specific competencies must be the defining feature of the education and evaluation of future health professionals within their respective disciplines of study as a strategy to ensure quality and standardization (Albanese, Mejicano, Mullan, Kokotailo, & Gruppen, 2008). Scope of practice designates the range of roles, functions, standards of practice, and regulations a profession's members are trained to perform (Bourgeault & Merritt, 2015; Dower et al., 2013). Scopes of

practice are multi-layered; competence to perform designated activities within defined practice settings is an essential element of a health professional's scope of practice (AND, 2013; Bourgeault & Merritt, 2015).

In order to effectively develop, maintain, and support the competence of health professionals, education planners must account for the many elements of competence. These elements include context and continuum of practice to recognize that practitioners begin with entry-level competence and gain further competence in other or advanced areas of practice throughout their careers (Takahashi et al., 2017). In HPE, one major step is identifying where to best integrate components of instruction and assessment related to specific competencies, and plan curriculum around the question "What abilities are needed of graduates?" (Frenk, Chen, Bhutta, Cohen, Crisp, et al., 2010; Mylopoulos, Brydges, Woods, Manzone, & Schwartz, 2015).

Central to CBE is the definition of *competence* (Fitzgerald, Burkhardt, Kasten, Mullan, Santen, et al., 2016). In dietetics, practice competency refers to a task that is performed in practice that can be carried out to a specified level of proficiency. The performance of a practice competency requires application of a combination of knowledge, skills, attitudes and judgments (PDEP, 2013). CBE has emerged as a foundational framework for defining the outcomes, methods, and organization of HPE, with the core tenets of the CBE paradigm requiring an understanding of competence as multi-dimensional, dynamic, contextual, and developmental (Fitzgerald et al., 2016). CBE focuses on learning outcomes rather than teaching process, on abilities in addition to knowledge, on skill-based versus time-based training, and the promotion of learner-centeredness (Fitzgerald et al., 2016; Takahashi et al., 2017). The competency-based approach is used to specify health problems and tailor the curriculum to address gaps between what healthcare professionals learn, know, and do versus expectations of patients, stakeholders, and regulatory agencies (Barton, Bruce, & Schreiber, 2018; Frank et al., 2010). One of the unique components of the competency-based approach is that success is based on the learner's ability to successfully incorporate knowledge, skills, and attitudes in the context of practice in specific domains, which emphasizes higher-level cognitive skills (Takahashi et al., 2017). While the concept of CBE is not altogether new, a better understanding of the facilitators and barriers to acquiring competence is warranted (Takahashi et al., 2017). In the next section, I will explore more deeply different definitions of leadership prevalent in health professions literature.

Exploring Different Definitions of Leadership

Several definitions and models of leadership currently exist within the contemporary literature. Traditional notions of leadership are conceptualized in relation to a hierarchy of an individual's positional authority and often focus on the leader's role in determining future desired states and directing organizational action to achieve those states. Katz and Kahn (1978) describe formal leadership as the incremental influence of position holders exercised via direct and indirect means to maintain or alter the existing dynamics in and of a system (see also Osborn, Hunt, & Jauch, 2002). The context of health care redesign is an inherently unpredictable environment (Denis, Langley, & Rouleau, 2010; Ford, 2009) and health systems cannot depend solely upon formally designated leaders. They must rely on a variety of individuals, networks, and groups who often do not have formal accountabilities and responsibilities to achieve system goals. As a result, health systems have become increasingly reliant on distributed leadership (Chreim, Williams, Janz, & Dastmalchian, 2010) or transformational leadership (Gabel, 2013).

Distributed leadership is considered to be a collective process where individuals negotiate their positions with respect to others in more unpredictable ways, rather than perceiving leadership as the result of single individuals (Denis et al., 2010). People with different skills and from different levels may pool their expertise and resources to foster change. This is particularly evident when interdisciplinary programs are implemented in health care organizations (Chreim et al., 2010).

The transformational leadership model might be one type of leadership with several characteristics that are potentially valuable for the health care environment and HPE. These characteristics include its principles- and values-driven approach, emphasis on relationships between leaders and subordinates, level of empirical support, intuitive appeal, and intention to *transform* and enhance the growth and work-related experiences, both of subordinates and leaders (Gabel, 2013). Education and training in health care, as in many fields, has hierarchical elements that are similar to the leader/follower, supervisor/supervisee relationships described that may benefit from the application of transformational leadership. The application of transformational leadership principles in HPE, however, should not be confined to these generally accepted hierarchical roles (Gabel, 2013). Leadership that is tied to formal hierarchical positions in traditional organizations is replaced by power sharing and collateral leadership, involving collaborative participation across boundaries. This may be achieved by diffusing leadership vertically and horizontally

across a network (Chreim et al., 2010). Additional training to gain competencies to shift and share tasks may help foster collaboration (Bourgeault & Merritt, 2015).

Health care relies on relationship-oriented professions; therefore/thus, successful health care professionals should be competent in establishing strong trust-based alliances with patients and colleagues. Transformational leadership requires leaders to encourage, support, and/or challenge those in lesser positions of authority to be innovative and active problem-solvers in order to find additional or better solutions to problems that arise. Educators in the health care fields would benefit from knowledge of leadership approaches that are empirically sound and appropriate for the health care environment (Gabel, 2013). In this way, educators can contribute to the socialization of future health professionals with respect to leadership competencies.

Theoretical Framework

This work is guided by Kern's "Six-Step Approach to Curriculum Development" (Thomas, Kern, Hughes, & Chen, 2016). This method was chosen for its comprehensiveness in allowing curriculum designers to plan a curriculum, whereby "curriculum" is defined in this context as a *planned educational experience*; it includes one or more sessions on a specific subject to a year-long course as well as clinical rotations to entire programs (Thomas et al., 2016). The six steps are:

1. Problem identification and general needs assessment;
2. Targeted needs assessment;
3. Goals and objectives;
4. Educational strategies;
5. Implementation;
6. Evaluation and feedback.

Step 1 of the "Six-Step Approach" is to conduct a general needs assessment, which requires a literature review and scan of existing resources (Thomas et al., 2016). The purpose of Step 1 is to build a rationale for the curriculum, ground the work in patient or societal needs, and focus on the curriculum's goals and objectives. It can also focus the educational and evaluation strategies as well as prevent duplication of effort. This study focused on Step 1 as a starting point to understand the literature on the relationship between competency-based education and leadership.

Methods

To identify the problem and conduct a general needs assessment, a literature review and scan of existing documents are conducted. One aspect of the needs assessment is to conduct a literature review. Five databases common in health sciences and nutrition research were used: Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Food Science & Technology Abstracts (FSTA), Scopus, and Education Information Resource Centre (ERIC). The ancestry method, a search strategy to track down references cited by relevant sources, was also incorporated by reviewing the bibliographies for any useful citations found in the search along with purposive sampled articles to find additional research articles. Google Scholar was used to cross-reference citations and other articles. Articles were electronically searched by the author and selected from English-language peer-reviewed journals dated between 2010-2018. In health sciences research, it is common for articles to be written in English and the local language in which the project is relevant. Focusing on articles published in English, with the exception of a few websites in French, may be a limitation of this project and is a result of the author's language proficiency.

An abstract search used the following key words: *health professions*, *medical*, *dietetics*, *nutrition*, *management*, *leadership*, *education*, *curriculum*, *competency*, *entry-level*, *skills*. Key words helped to identify articles relevant to this topic and may be similar to key words used in previous studies. A simple search string was used across all databases in order to standardize the search method. Abstracts were then reviewed for specific relevance to the topic of dietetic leadership competency and the educational focus of this project. The University of Ottawa Education Liaison Librarian provided additional support to search databases for relevant articles. We concurred that the literature specific to dietetics is very limited and, consequently, the search was broadened to include the following additional key terms: *allied health professions*, *nursing* and *medicine*.

To gain an understanding of dietetic education in Canada, I reviewed 27 websites (see Appendix A): Dietitians of Canada (the national professional association; n=1), provincial dietetic regulatory colleges (n=10), and accredited dietetic university programs (n=16). I also reviewed a selection of course outlines on *management* and *professional practice* (n=10) from four dietetics programs to gain a sense of topic areas covered in these courses. While the course outlines were not current or a comprehensive representation of the dietetic curricula across Canada, the outlines provided insight into the learning objectives addressed in these types of courses and how these courses are taught within the past 10 years. Accreditation is the formal legitimization of an institution to grant degrees, enabling its

graduates to achieve licensing and certification for professional practice. The aim is to ensure an acceptable quality of graduates to meet the health needs of patients and populations. Lastly, I reviewed the Government of Canada section on Health Human Resources related to entry-to-practice credentials.

Findings and Discussion

The literature suggests that there is interest in improving leadership skills of health professionals, including dietitians, as early as possible as part of their academic education and training (AND, 2013; Frenk et al., 2010). However, there is limited evidence that competencies in leadership are well integrated into health professions curricula in general, let alone dietetic education (e.g., only three articles were found on this topic through my systematic search). This initial finding suggests that there is a difference between the current and ideal approaches to developing leadership skills in health professionals, indicating a potential learning gap and curriculum development opportunity. Thus, this section presents key findings of the general needs assessment and discusses their implications for HPE. First, competencies and curricula are discussed to draw a link between the health and education sectors. Second, the value health professions leadership will be discussed. The opportunity for leadership development through interprofessional education concludes the discussion.

Competencies and Curricula

From a high level, HPE is part of a complex system. There is a fundamental link between professional education and health conditions; balance between health and education sectors is crucial for efficiency, effectiveness, and equity. Population health needs and the labour market for health professionals are links between the education system and the health system (Frenk et al., 2010). Frenk and colleagues (2010) suggest that there is a crisis related to the emerging mismatch of professional competencies to patient and population priorities because of fragmentary, outdated, and static curricula, which produce ill-equipped graduates from under-financed institutions. Undergraduate education should set graduates up for lifelong learning (Frenk et al., 2010) by equipping them with valuable research skills, and competencies in policy, law, management and leadership. While this call for action is specific to medical education, it extends to nursing and allied health professions, including dietetics. Competence to perform designated activities within defined practice settings is an essential element of the scope of practice in nutrition and dietetics.

Recognizing and Valuing Health Professions Leadership

A focus on leadership training in medicine and nursing is well studied, however, there is limited literature on its application in other health professions. Generally, the literature suggests that health professions leadership is valued in the education and training of health professionals (Barton et al., 2018; Schmidt-Huber, Netzel, & Kiesewetter, 2017). For example, leadership competencies of physicians are important for successful interprofessional collaboration and patient care (Frank, Snell, & Sherbino, 2015; Schmidt-Huber et al., 2017). Leadership was also identified as key to competent nursing teamwork and as a catalyst for sustainability and effectiveness of team training programs (Barton et al., 2018), with mentorship seen as a key element of being able to lead others. Furthermore, there is growing discourse about the necessity and value of nurses and other health professionals enacting shared leadership roles in frontline health care teams. This shift toward collaborative leadership is emerging as important for improving interdisciplinary team functioning and patient care outcomes (Barton et al., 2018; Hickson et al., 2017).

Barton and colleagues (2018) also identified a need to understand other health professionals' capabilities and to share responsibilities on the frontline. There is a strong desire among health professionals for greater influence, as well as a recognition that we need to be more proactive, by leading rather than responding, particularly at the strategic level (Barton et al., 2018). With respect to dietetics, dietitians play a crucial role as part of interdisciplinary teams and may need to fill informal or distributed leadership roles, thus requiring greater influence to lead teams. Ultimately, dietitians wish to see widening career opportunities, a culture of strategic leadership, and greater influence and visibility, while at the same time retaining their strong foundations (Hickson, Child, & Collinson, 2017).

Current Dietetic Curricula and Leadership

Given that the three main articles (Arendt & Gregoire, 2005; Gregoire et al., 2005; Porter, 2005) found relating to dietetics and leadership are somewhat dated, there is minimal evidence of new research related to developing leadership skills in dietitians. This is not surprising in the Canadian context considering the reality that leadership is absent from the ICDEP competency areas and related performance indicators. As shown in Table 1, performance indicators from the five current competency areas that might address leadership skills are embedded in the areas of "Professional Practice", "Communication and Collaboration", and "Management".

Table 1. Current leadership-related ICDEP competencies

Competency #	Practice Competencies
Professional Practice	
1.11	Assess and enhance approaches to dietetic practice.
1.12	Contribute to advocacy efforts related to nutrition and health.
1.13	Participate in practice-based research.
Communication and Collaboration	
2.05	Contribute to the learning of others.
Management	
5.01	Assess strengths and needs of programs and services related to dietetics.
5.02	Manage programs and projects.

Downey, Parslow, and Smart (2011) suggest that most health professionals do not hold formal leadership positions and may or may not aspire to them. In addition, Porter (2005) writes that there are mid- and senior-level dietitians who are not willing or able to take leadership roles due to feelings of under-appreciation, inadequate compensation, and low job satisfaction. Unique competencies appear to be important for those aspiring to be in leadership positions. Dietitians were not perceived by senior executives to be highly competent in areas rated most important for leadership roles (Gregoire et al., 2005). Additional competency development may be needed to better prepare dietitians for leadership roles.

According to the literature, leadership can also be developed and demonstrated through mentoring of students, peers and colleagues (Barton et al., 2018; Kris-Etherton, Akabas, Bales, Bistrain, Braun, et al., 2014). Practicing RDs are often required to mentor students, interns and, in certain circumstances, other colleagues and health professionals.

However, there is no explicit evidence in the current ICDEP that mentorship is a required skill in dietetic practice. Upon review of the available Canadian universities' course outlines, it is evident that curricula are developed to meet the current ICDEP performance indicators, which do not explicitly call for leadership development. In a study conducted by Arendt & Gregoire (2005) on dietetic students in the United States, leadership behaviours were more prevalent in students who had previous leadership coursework, were older, or had previous leadership experiences. Thus, even with the limited literature available on this specific area, there is growing evidence that leadership should become an explicit core competency and a clear learning outcome in curricula in order to further promote leadership skills and ambition in dietetic students and dietitians.

Leadership Development through Interprofessional Education

Undergraduate education must prepare graduates for lifelong learning (Frenk et al., 2010; Mylopoulos et al., 2015; Takahashi et al., 2017). Traditionally, health professionals are trained and then continue their practice within silos, which not only limits opportunities for collaboration across health disciplines, but also increases competitiveness between professions (VanderWielen, Vanderbilt, Dumke, Do, & Isringhausen, 2014). To achieve a higher degree of effective team functioning, innovative approaches to interprofessional models of formal education, practical training, and professional practice are needed.

The World Health Organization (WHO, 2010) defines *interprofessional education* (IPE) as what happens when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes. WHO (2010) recognizes IPE as a necessary component of every health professional's education. Bourgeault and Merritt (2015) also suggest that IPE may be a necessary intervention, but conclude that it is insufficient to make significant changes to scope of practice optimization, which occurs when health professionals can practice the procedures, actions, and processes that they are permitted to undertake in keeping with the terms of their professional license. IPE aims to deliver graduates with collaborative practice capabilities including communication, teamwork, role clarification, and client-centred care (Brewer, Flavell, & Jordon, 2017). IPE can also strengthen professional identity and increase value for health leadership. As a result, improved understanding and appreciation for different health professions' scopes of practice can be socialized through IPE and foster greater teamwork.

While dietetic education provides some baseline skills for health care and other management positions, to be successful and develop careers in this area, dietetic education

must reach beyond the dietetic community to develop skills in business thinking or health care administration (McClusky, 2005). Herein lies the opportunity for dietetic education. For example, there is evidence of leadership competencies being integrated into medical and nursing curricula (Barton et al., 2018; Schmidt-Huber et al., 2017). Through IPE, dietetic programs may be able to partner with other such health professions programs with established leadership development curricula. Schmidt-Huber et al. (2017) recommend implementing the development of leadership competencies as early as possible in HPE. Outcomes of developing leadership competencies earlier can strengthen awareness for leadership roles and the long-term training effects of leadership development result in an increase in specific competencies relevant for effective interprofessional collaboration.

Conclusion

Taken together, the findings of this general needs assessment suggest that health professions leadership is valued and seen as integral in interprofessional teamwork and patient care. However, for the dietetic profession, it is evident that in some practice settings, dietitians were not perceived to be highly competent in some leadership and operations management skills. Importantly, leadership behaviours *were* more prevalent in older students or those who had previous leadership training and experience. There is opportunity for pedagogical and practice-based activities to strengthen leadership abilities of future dietetic professionals. The needs assessment also suggests that medical and nursing education are beginning to enhance curricula with leadership training. Team-learning through interprofessional education between future dietitians and other health professions can support this type of leadership development and team socialization. Due to the ongoing transformation of health systems, strong teamwork, both within and between health professions, has become a necessity. This paper shed light on some of the major needs and learning gaps in health professions education, particularly for dietetics, with a view to building the capacity and confidence of dietitians to use leadership skills.

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Appendix A: List of Websites Reviewed

To gain an understanding of dietetics in Canada, included is a list of websites from various agencies and institutions related to dietetic education and practice.

Agency / Institution	Website
Dietitians of Canada	www.dietitians.ca
College of Dietitians of British Columbia	http://collegeofdietitiansofbc.org/home/
College of Dietitians of Alberta	http://www.collegeofdietitians.ab.ca/
Saskatchewan Dietitians Association	https://www.saskdietitians.org/
College of Dietitians of Manitoba	http://manitobadietitians.ca/home.aspx
College of Dietitians of Ontario	https://www.collegeofdietitians.org/
Ordre prfessionnel des diététistes du Québec	https://opdq.org/
Dietitians Association of New Brunswick	http://www.adnb-nbad.com/
The Nova Scotia Dietetic Association	https://www.nsdassoc.ca/
PEI Dietitians Registration Board	http://www.peidietitians.ca/
Newfoundland and Labrador College of Dietitians	http://www.nlcd.ca/
University of British Columbia	http://www.landfood.ubc.ca/academics/undergraduate/fnh/dietetics/

University of Alberta	https://www.ualberta.ca/agriculture-life-environment-sciences/programs/undergraduate-programs/degree-programs/nutrition-food-science/dietetics-specialization
University of Saskatchewan	https://pharmacy-nutrition.usask.ca/
University of Manitoba	http://umanitoba.ca/faculties/afs/dept/fhns/programs/HNS/index.html
Brescia University College	http://brescia.uwo.ca/academics/undergraduate-programs/school-of-food-nutritional-sciences/foods-and-nutrition/
University of Guelph	https://www.uoguelph.ca/family/
Ryerson University	https://www.ryerson.ca/nutrition/
Université d'Ottawa / University of Ottawa	http://sante.uottawa.ca/nutrition/
McGill University	http://www.mcgill.ca/nutrition/programs/undergraduate/dietetics
Université de Montréal	https://nutrition.umontreal.ca/
Université Laval	https://www.fsaa.ulaval.ca/nutrition.html
Université de Moncton	http://www.umoncton.ca/umcm-fsssc-esanef/
Mount Saint Vincent University	http://www.msvu.ca/en/home/programsdepartments/professionalstudies/appliedhumannutrition/default.aspx
St. Francis Xavier University	https://sites.stfx.ca/human_nutrition/
Acadia University	https://nutrition.acadiau.ca/home.html
University of Prince Edward Island	http://www.upei.ca/science/applied-human-sciences