

# Planning a graduate programme in public health nutrition for experienced nutrition professionals

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## Abstract

*Objective:* Public health renewal in Canada has highlighted the need for development and expansion of the public health nutrition workforce, particularly in northern and rural communities. The purpose of the present paper is to describe the planning of a more accessible graduate programme for experienced nutrition professionals. The planning effort was challenged by a short timeframe between programme approval and implementation and required intense collaboration with stakeholders and students.

*Design:* The programme planning model developed by The Health Communication Unit (THCU) at the Centre for Health Promotion was used to guide the process. This six-step model was familiar to key stakeholders and involved pre-planning, conducting a situational assessment, establishing goals and objectives, developing strategies and outcome indicators, and monitoring feedback.

*Results:* Resource constraints, short timelines and debates around distance education options presented challenges that were overcome by conducting a thorough needs assessment, creating an advisory committee, engaging key stakeholders in the planning process, and building on existing resources. Extensive involvement of the first cohort of students in ongoing planning and evaluation was particularly helpful in informing the evolution of the programme.

*Conclusions:* The THCU planning model provided a useful framework for stakeholder collaboration and for planning and implementing the new graduate programme in public health nutrition. Preliminary data suggest that graduates are benefiting from their educational experiences through career enhancement opportunities. The evaluation strategies built into the programme design will be useful in informing ongoing programme development.

## Keywords

Public health nutrition  
Programme planning  
Workforce development  
Graduate education

Global recognition of the importance of nutrition in promoting the health of populations has led to the development of new professional education programmes in public health nutrition<sup>(1–5)</sup>. In Canada, current and projected shortages of nutrition professionals, particularly in northern and rural communities<sup>(6–9)</sup>, challenge the public health system's capacity to effectively address issues such as obesity and chronic disease prevention, maternal and child health, and food security<sup>(6)</sup>. The purpose of the present paper is to describe the planning of a more accessible graduate programme for experienced nutrition professionals.

## Background

In 2004, the Public Health Agency of Canada was established to coordinate and enhance public health services

on a national level<sup>(10)</sup>. One of the major initiatives of the Agency has been skills enhancement of the public health workforce. New core competencies for public health practice have been developed for all public health disciplines<sup>(11)</sup> and there is significant momentum to promote the development of discipline-specific competency sets<sup>(10)</sup>. Meanwhile local health units, challenged by decades of resource constraints, an ageing workforce and in many cases vast geographical areas to service, are experiencing gaps in personnel<sup>(9)</sup>. Northern and rural health units, in particular, have struggled to recruit qualified dietitians to deliver federally, provincially and locally mandated programming<sup>(8,9)</sup>.

In 2002, nutritionists from northern Ontario approached the University of Toronto to explore opportunities for enhancing access to graduate training for dietitians working in northern and rural health units. With few exceptions, public health nutrition professionals in

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Canada are registered dietitians who then acquire public health expertise through on-the-job training and/or additional graduate education<sup>(6)</sup>. Unlike the European Credit Transfer and Accumulation System<sup>(12)</sup> and the *Strategies for Success: Curriculum Guide*<sup>(13)</sup> in the USA, no standardized tools existed in Canada to guide curriculum development and recognition across jurisdictions. Specific educational requirements for public health nutrition professionals vary among the country's ten provinces and three territories; however, a 4-year undergraduate degree in food and nutrition accompanied by an internship or practicum is a minimum requirement all round. Health units often employ dietitians directly from their internship training, where exposure to public and population health curriculum is often limited. Few graduate programmes specific to public health nutrition existed, and those that did required students to leave their workplaces for up to 2 years to complete their graduate training. This suggested the need for advanced education in public health nutrition that did not require dietitians to leave their communities for extended time periods.

In 2005 we became aware of an opportunity to apply for internal university funding to develop a new programme and spent 3 months exploring the feasibility of such an application. In 2006 the proposal for development funding was submitted and approved by the university and we immediately applied to the Ontario Council of Graduate Studies to have the new programme approved as a graduate degree offering in Ontario. This submission was approved in June of 2007. This timing gave us the option of admitting students in the autumn of 2007, only three months away, and one year earlier than planned. Initiating the programme early would alter the year of detailed curriculum planning that we had envisioned, but would enable us to get going at a time when there was significant stakeholder support. We decided that our existing graduate programme in Community Nutrition provided a strong base upon which to move forward and we opted to admit a small group of students that autumn. While some of the needs assessment data had been gathered previously, most of the formal planning described in the present paper took place within this 3-month period and into the first year of programme operations. This represents an unusually brief planning timeframe and we hope that sharing our efforts to optimize the opportunity we faced will be helpful to readers needing to construct new academic programmes in similarly short order.

### The planning model

The programme planning model developed by The Health Communication Unit (THCU) at the Centre for Health Promotion, University of Toronto<sup>(14)</sup> was used to guide the planning process. This model is used widely by health units in Canada for planning health promotion

initiatives and provides a framework that is applicable to diverse planning contexts. The model is founded on the Ottawa Charter of Health Promotion<sup>(15)</sup> and incorporates a 'social determinants of health'<sup>(16,17)</sup> perspective. This model was selected because of its focus on existing strengths and assets, not just on gaps and needs<sup>(14)</sup>, and because of its familiarity among stakeholders who would be involved in our planning. Figure 1 illustrates the steps involved in this planning approach.

Step 1 addresses how the planning process will take place. During this phase, stakeholders are identified and discuss how they will work together, how data will be collected and how decisions will be made. Step 2 involves assessing the current situation including needs, gaps and opportunities as well as strengths and existing resources. This phase attempts to confirm whether or not planning should proceed. Steps 3 to 5 carve out the goals and objectives, strategies and activities, and desired outcomes. This includes identification of indicators that will be used to track progress. Step 6 links goals, objectives and strategies to indicators in order to support programme evaluation. Feedback is built into each step of the process. While each step is represented separately in the model, some planning situations require more than one step to happen simultaneously or in different sequences<sup>(14)</sup>.

The sections that follow describe the experiences and challenges encountered during each step of implementing the THCU programme planning framework.

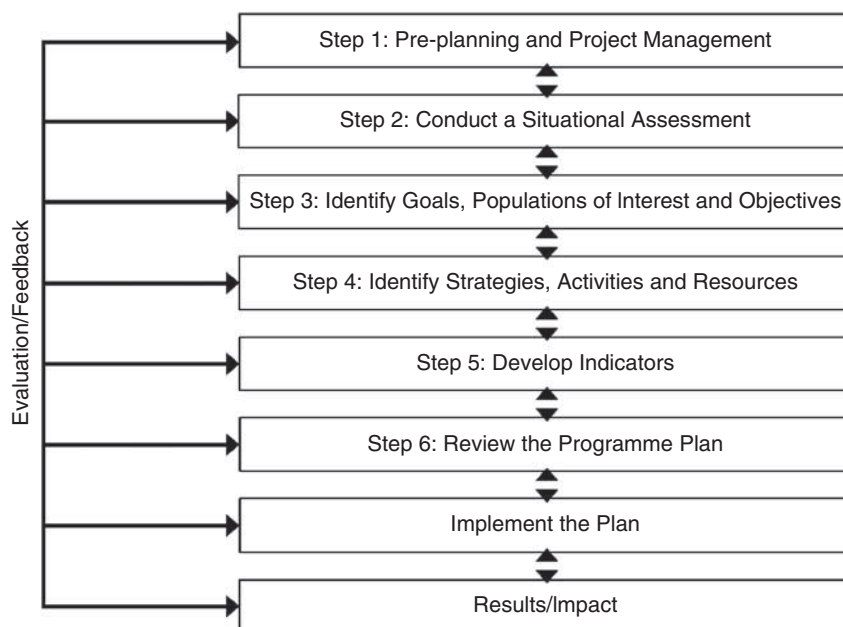
#### **Step 1: Pre-planning and project management**

Preparing the funding proposal enabled us to assemble key stakeholders to help formulate the vision for the new programme and to guide programme development. While public health renewal was occurring nation-wide,\* most health service delivery in Canada is the responsibility of provincial jurisdictions. As we imagined that our initial efforts would target an audience largely from our local province, Ontario, members of our advisory committee were selected to represent both national and Ontario-specific perspectives. Table 1 lists the advisory committee members who agreed to support the project and their roles. The committee established terms of reference that outlined members' roles as advisors, with the university being ultimately responsible for decision making and resource provision.

#### **Step 2: Situational assessment**

The advisory committee identified several educational needs and a situational assessment involving qualitative and quantitative information gathering was undertaken to explore gaps, issues and assets upon which to build.

\* The outbreak of SARS (severe acquired respiratory syndrome) and two cases of contaminated community water supplies enhanced public and government awareness of the need for improved public health infrastructure<sup>(18)</sup>.



**Fig. 1** The Health Communication Unit (THCU) planning model (reprinted with permission of THCU, Centre for Health Promotion, University of Toronto)

**Table 1** Advisory committee membership

Member	Organization	Role
Public health nutrition professionals (four members) Executive Director	Health units/departments in four geographical regions of Ontario Ontario Public Health Association	Present the perspectives of front-line and senior nutrition professionals in rural and northern communities Bring awareness of current and future provincial public health trends to planning process
Director of Education and Professional Standards Associate Director	Dietitians of Canada	Present national views on dietetic training, continuing education and professional development issues
Senior Nutritionist	Canadian Institutes of Health Research, Institute of Population and Public Health Ontario Ministry of Health Promotion	Provide national research and development perspectives on public health priorities
Representative/liaison member	Ontario Society of Nutrition Professionals in Public Health	Represent views of government body responsible for provincial public health nutrition programming Represent and exchange information with provincial public health nutrition professionals
Member of Board of Directors	Canadian Public Health Association	Provide national-level public health and practice perspectives

*Gaps/needs assessment*

Ongoing discussion with public health leaders and nutrition professionals confirmed our view that dietitians, particularly those working in northern and rural communities, had limited access to graduate education programmes specific to public health nutrition. We did not know, however, what kind of programmes would best address the need and what the demand would be. Dietitians of Canada (DC), the national professional association responsible for promoting dietetics practice and accrediting education programmes, and a contributing member of our advisory committee, conducted a survey of its membership to help address these issues. An electronic survey was sent to all 5000 members of DC. Some 633 members (13%) responded and 203 (32%) of those respondents indicated they would apply to a programme

such as the one we were planning. Although we presented other options for continuing education, such as certificate programmes, most respondents viewed a masters programme as more advantageous in advancing their careers. Survey results also suggested the need to limit students' time away from family and community, provide curricula that builds on work and life experiences, and minimize the cost of the programme. Students indicated interest in distance education options and we noted that there were no distance graduate education programmes specific to public health nutrition in Canada.

*PEEST analysis*

The THCU model suggests considering the political, economic, environmental, social and technological (PEEST) factors that impact the planning situation.

Accordingly, we noted that there was a tide of public health development activity across the country and we were not the only university developing education programmes for this sector. We anticipated that we could be faced with significant 'competition' for graduate students in public health; however, our programme was the only one under development that we were aware of that would focus specifically on nutrition. Within the university, plans were underway to re-establish a School of Public Health and programmes that fit within that domain would further strengthen the strategic direction. From an economic perspective the Academic Initiatives Fund (AIF)\* within our own university would provide development and start-up funds; however, ongoing financial support would need to be generated from the government's tuition funding formula, which would require considerable rationalization of resources.

Space and the availability of faculty with appropriate expertise were also limited. We presented our ideas to colleagues at faculty and department meetings. While faculty supported the programme in principle, most expressed concern about resources and distance education in particular. Those who had taught online courses found this approach to be more time-demanding than traditional classroom teaching. Student feedback indicated the desire to interact with leaders in practice, as well those in academia, and we discovered that technical support for online instruction through our Faculty of Medicine could enable practice leaders in different parts of the province to teach our students.

#### *Strengths and opportunities*

In addition to the distance delivery support, we identified expertise in adult education within the university. Our most significant opportunity, however, lay in the fact that we had an existing graduate programme in community nutrition upon which to build additional curricula<sup>(19)</sup>. In fact several of the courses offered in this programme were specific to public health and could be accessed by students in the new programme. This minimized the need to develop an entirely new curriculum. The development of new Masters of Public Health (MPH) programmes across Canada, some of which incorporated distance learning, also presented collaborative opportunities to share course development so that curricula were not duplicated. The final opportunity identified involved existing collaborative relationships with the Pan-Canadian Task Force on Public Health Nutrition Practice. This group was in the process of developing competencies and recommendations for the enhancement of public health nutrition practice in Canada<sup>(6)</sup>, and the University of Toronto was a

\* The AIF at the University of Toronto hosts an annual call for proposals to develop new programmes that further the university's academic mission. Funds are awarded for development only. We were successful in obtaining start-up funds for the initial 3-year period of programme development and implementation.

participant in this process. The work of this group was helpful in informing programme development.

The situational assessment was a vital planning component that confirmed the need – as well as the demand – for a programme that could enhance access to graduate education in public health nutrition. The political climate was favourable and resources within the university and among external partners were identified. The next step was to establish goals and objectives for the programme.

#### **Step 3: Goals and objectives**

The THCU model<sup>(14)</sup> and Bloom's taxonomy of educational objectives<sup>(20)</sup> informed the development of goals and objectives. The TCHU model suggests that goals provide visionary direction without necessarily being measurable, while objectives provide specific and measurable outcomes. Bloom's taxonomy encourages the construction of objectives that extend beyond the acquisition of knowledge to the promotion of skills development and application, critical reflection and transformation of practice<sup>(20)</sup>. The three major goals for the programme were identified as follows.

The new graduate Public Health Nutrition programme will:

1. Enhance knowledge, skills and leadership potential of public health nutrition professionals in communities across Canada.
2. Contribute to public health renewal in Canada by strengthening the public health nutrition workforce.
3. Enhance capacity of the public health system to promote the nutritional health of Canadians.

Specific objectives are listed in Table 2, along with the indicators developed in the steps that follow.

#### **Steps 4–6: Developing strategies, approaches and indicators**

Based on the data gathered in the situational assessment, and the goals and objectives of the programme, a curriculum was developed that incorporated both face-to-face and distance learning strategies, provided students with substantive opportunities to share practice experiences with each other, and enabled them to apply new learning in the workplace. The format consisted of one semester on campus, two or three online courses, a one-week intensive summer institute accompanied by readings and assignments, and completion of a major workplace project. Table 3 provides an overview of the programme structure and content. The programme may be completed within a 1-year period or more gradually up to 5 years depending on student needs and preferences<sup>(19)</sup>.

#### *On-campus courses*

Currently students wishing to complete the programme within 12 months are required to spend the autumn semester (September to December) on campus completing four or five half-credit courses. This provides students

**Table 2** Programme goals, objectives and evaluation indicators

<b>Goal #1 – the Public Health Nutrition programme will enhance knowledge, skills and leadership potential of public health nutrition professionals in communities across Canada</b>			
Objective – through the programme students will:	Outcomes	Indicators	Monitoring tools
1.1 Access graduate education in public health nutrition	(i) RD in rural and northern communities apply to the programme (ii) RD can continue to work while enrolled in the programme (iii) RD complete the programme requirements in 1 year (if desired) (iv) Access to educational methods that support distance education	<ul style="list-style-type: none"> <li>● No. of applicants from rural and northern communities</li> <li>● No. of working students</li> <li>● Time to completion of full-time students</li> <li>● Development and implementation of online courses</li> <li>● Development and implementation of summer institute</li> <li>● No. of partnerships established with other universities</li> <li>● Student assignments</li> <li>● Use of multi-media, oral, online presentations</li> <li>● Practicum portfolio</li> <li>● Summer institute participation</li> <li>● Student and advisor evaluations</li> </ul>	<ul style="list-style-type: none"> <li>● Annual summary of applicant demographics</li> <li>● Student survey</li> <li>● Post-programme survey</li> <li>● Tracking of admissions and graduation</li> <li>● Online course outlines &amp; evaluations</li> <li>● Summer institute evaluations</li> <li>● Involvement of new partners in the programme</li> <li>● Assignments</li> <li>● Student portfolios</li> <li>● Student presentations</li> <li>● Student and advisor evaluations</li> <li>● Summer institute participation</li> <li>● Student progress reports</li> </ul>
1.2 Demonstrate knowledge and skills related to public health nutrition practice and research	(i) Successful completion of courses, practicum and summer institute by students	<ul style="list-style-type: none"> <li>● Summer institute</li> <li>● Workplace practicum including research project</li> <li>● Online courses and discussion formats</li> <li>● No. of new partnerships in research, teaching and continuing education</li> <li>● Enhanced involvement with other partners</li> </ul>	<ul style="list-style-type: none"> <li>● Annual occurrence of each indicator, i.e. summer institute, online courses, research projects</li> <li>● Student evaluations regarding course delivery</li> <li>● Employer survey</li> <li>● Documentation of each partnership formed or fostered, list created and updated annually</li> <li>● Employer survey</li> </ul>
<b>Goal #2 – the Public Health Nutrition programme will contribute to public health renewal in Canada by strengthening the public health nutrition workforce</b>			
Objective	Outcome	Indicators	Monitoring tools
2.1 The University will build on existing infrastructure and expertise to develop and implement innovative education models	(i) Innovative models developed and implemented	<ul style="list-style-type: none"> <li>● Summer institute</li> <li>● Workplace practicum including research project</li> <li>● Online courses and discussion formats</li> </ul>	<ul style="list-style-type: none"> <li>● Annual occurrence of each indicator, i.e. summer institute, online courses, research projects</li> <li>● Student evaluations regarding course delivery</li> <li>● Employer survey</li> </ul>
2.2 The University will establish and maintain relationships and partnerships with public health and community organizations	(ii) Collaboration with public health organizations, leaders, stakeholders on education, research and other public health initiatives	<ul style="list-style-type: none"> <li>● No. of new partnerships in research, teaching and continuing education</li> <li>● Enhanced involvement with other partners</li> </ul>	<ul style="list-style-type: none"> <li>● Documentation of each partnership formed or fostered, list created and updated annually</li> <li>● Employer survey</li> </ul>
<b>Goal #3 – the Public Health Nutrition programme will enhance the capacity of the public health system to promote the nutritional health of Canadians</b>			
Objective	Outcome	Indicator	Monitoring tools
3.1 The programme will increase the number of graduate prepared public health nutrition professionals in <ul style="list-style-type: none"> <li>● northern and rural communities (short-term goal)</li> <li>● Canada (medium-term goal)</li> <li>● globally (long-term objective)</li> </ul>	(i) More masters graduates are working in public health (ii) More public health nutrition professionals are graduate prepared	<ul style="list-style-type: none"> <li>● No. of graduates working in rural and northern Canadian communities, other Canadian communities, and global settings</li> <li>● No. of students who complete the programme</li> </ul>	<ul style="list-style-type: none"> <li>● Post-student survey administered at a set point following each cohort's convocation</li> <li>● Employer survey</li> <li>● Student tracking</li> </ul>
3.2 Graduates obtain leadership, policy-making and decision-making roles related to public health	(i) Graduates obtain leadership, policy-making and decision-making roles related to public health	<ul style="list-style-type: none"> <li>● No. of graduates who report obtaining these positions</li> </ul>	<ul style="list-style-type: none"> <li>● Post survey administered at a set point following each cohort's convocation</li> </ul>

RD, registered dietitian.

Table 3 Programme overview

Term	Time	Programme component	Description	No. of full credit equivalents (FCE)	Location
1	Sep.–Dec.	<ul style="list-style-type: none"> <li>● Introduction to Public Health Sciences</li> <li>● Community Health Appraisal Methods</li> <li>● Public Health Policy</li> <li>● Public Health Nutrition</li> </ul>	<p>Population health, social determinants, health promotion principles, interdisciplinary fields</p> <p>Research, assessment methods</p> <p>Public health policy development in Canada</p> <p>Establishing/assessing/monitoring nutrient requirements and intakes of populations</p> <p>Student choice</p> <p>Analysing primary literature within public health context</p>	0.5 0.5 0.5 0.5	Campus Campus Campus Campus
2	Jan.–Apr.	<ul style="list-style-type: none"> <li>● Elective 1</li> <li>● Nutrition Metabolism for Public Health Professionals</li> </ul>	<p>Student course selection or worksite project</p>	0.5 0.5	Campus or online Online
3	Apr.–Jun.	<ul style="list-style-type: none"> <li>● Elective 2 or practicum</li> <li>● Nutrition Programmes and Strategies</li> <li>● Summer institute (leadership)</li> </ul>	<p>Critical analysis of international, national, provincial and local initiatives and approaches</p> <p>Programme planning &amp; evaluation, leadership, communication skill development</p>	0.5 0.5 0.5	Online or workplace Online Campus or centrally located health department Worksite or online or on campus
4	Jul.–Aug.	<ul style="list-style-type: none"> <li>● Practicum or Elective 2</li> </ul>	<p>Student course selection or worksite project</p>	0.5	Worksite or online or on campus

with opportunities to establish relationships with peers and instructors. This coursework is shared with the pre-existing masters programme in Community Nutrition, which provides foundational courses in public health nutrition theory and practice<sup>(19)</sup>.

#### Online courses

In the winter semester, students return to their communities and resume their jobs while completing online coursework. Two new online courses have been developed and implemented to meet the specific learning needs of students in this programme. The course 'Nutrition Metabolism for Public Health Nutrition Professionals' was developed to update students on nutritional science and enhance their ability to assess the primary literature in this field. The online version of the second course, 'Nutrition Programs and Strategies', was adapted from an existing classroom course, with a particular focus on experiential learning<sup>(21–23)</sup> and reflective practice<sup>(21,24)</sup>. Development of additional online courses is underway and students may take up to two approved courses at other universities.

#### Summer institute

At the end of June, students gather for a one-week intensive programme on leadership. During this time, they attend workshops and meet with experts in programme planning and evaluation, leadership development and communications to plan projects that are completed over the summer months.

#### Workplace practicum project

Students spend approximately 160 h completing a workplace project that allows them to apply new knowledge and to showcase their acquired skills. Examples of projects that have been undertaken include: the development of a position paper on *trans* fat; the development and implementation of an online workplace health programme; the development of a workplace healthy food policy; and an environmental scan of 'buy local' food initiatives.

### Challenges, opportunities and lessons learned

The main challenges and dilemmas encountered in planning this programme were resource constraints and the development of online *v.* classroom-based learning. Several opportunities arose, however, that enabled us to address these.

#### Resource constraints

Implementing the programme sooner than expected provided momentum to move forward, but meant that we had to make decisions quickly and sometimes without the data we would have liked to inform those decisions. We received funding for planning the programme, developing

two new online courses and hiring a part-time coordinator; however, other administrative, teaching and capital costs had to be absorbed within the existing infrastructure. Recruiting a coordinator proved to be challenging due the very shortage of expertise in the workplace that we were trying to address with the new programme.

Faculty expressed concerns about the capacity within existing courses to take additional students from the new programme, for instructors to teach new courses and to provide students with adequate mentorship. These concerns were addressed by limiting the number of potential enrollees in existing courses and seeking instructors from the field, rather than from within the academy, to develop and teach some of the new courses. A PhD scientist with expertise in nutrition metabolism and online course development was hired to develop and teach 'Nutrition Metabolism for Public Health Nutrition Professionals'. The programme advisory committee was instrumental in reviewing drafts and providing suggestions for topics and resources. The second distance course, 'Nutrition Programs and Strategies', was taught by a masters-prepared senior public health nutritionist from northern Ontario with years of provincial leadership experience. Her involvement enriched the professional and experiential content of the course.

We anticipated that some students might need extra support as they adjusted to online learning and therefore introduced them to resources during the on-campus period, to enhance these skills. We also made efforts to pair students from this programme with those from our Community Nutrition programme throughout the campus courses shared by the two programmes, so that the students straight from their undergraduate training could assist the mature learners with some of the recent scientific advances, and the experienced students could help the others appreciate the relevance of the material for practice.

### ***Distance v. on-campus***

One of our biggest dilemmas was determining what part(s) of, and through what means, the programme should be distance-oriented. If we implemented some of the existing classroom-based courses, the programme could be underway immediately, giving us a semester lead time to start to develop online and other learning strategies. Attempting to provide the entire programme electronically would require many more months of development and was beyond the resources available to us. Instructors with the specific expertise needed to develop and teach online public health nutrition courses were also in short supply and our funding enabled the development of two online courses only. We considered other distance-oriented approaches such as mail-out packages and modular formats; however, respondents to our initial survey identified the latter option as being too costly. The distance education literature identifies a number of challenges and opportunities associated with

web-based learning<sup>(25–29)</sup> and we wanted to take advantage of new venues for students to share insights and experiences. The literature on distance graduate public health nutrition education is limited, but studies on undergraduate and business programmes<sup>(30–32)</sup> suggest using clusters of learning modes (e.g. text, audio, video, synchronous and asynchronous communication) to suit students' individual learning styles<sup>(30,32)</sup>. These were incorporated into course delivery.

In the end, we felt that proceeding with one semester on campus, followed by online courses conducive to completion while students were back in their workplaces, along with the summer institute and worksite practicum project made best use of resources while addressing student needs. We noted the financial and practical limitations of the one semester on campus requirement for students, and committed to monitor student responses and employer receptivity to this component of the programme.

### ***Lessons learned***

We initially admitted a cohort of four students, followed by a second cohort of six, and aim to admit ten to fifteen students to the programme annually over the next two to three years. Through this process, we have garnered valuable insights about developing a new graduate programme that we hope will be useful to others embarking on similar initiatives.

### ***Situational assessment is critical***

Conducting a situational assessment is a key focus of the THCU planning model<sup>(14)</sup> and our experience confirms this. The survey proved to be particularly informative in guiding programme development. For example, we initially considered offering the programme in a modular format that would require students to come to campus four times per year for a few weeks at a time. However the survey feedback was clear that this format was not well received by potential applicants, so other options were pursued.

### ***Engage stakeholders***

Identifying the concerns of faculty, students, administrators, professional groups and the public health community during the planning process helped us anticipate challenges and align our programme with other initiatives that were underway. Establishing an advisory committee was an effective means of gathering expertise, support and insight as to how to make the programme relevant. Members of the public health community provided direction in curriculum content that would prepare students for leadership roles in the field. Professional groups helped us tap into our target audience to assess the best ways of offering education programmes. Faculty provided input into course offerings and existing curricula across the university.

**Table 4** Overview of existing (MHS Community Nutrition) and new masters (MScCH Public Health Nutrition) programmes

Course/component	Existing masters programme	New masters programme	Comments
Intro Public Health Science	✓	✓	Interdisciplinary focus
Community Health Appraisal Methods (CHAM) 1 – Quantitative	✓	✓ or	New programme students take CHAM 1 or 2
CHAM 2 – Qualitative Methods	✓	✓	Existing masters students take both CHAM 1 & 2
Public Health Policy	✓	✓	
Intro to Community Nutrition Practice	✓		Required for dietetics entry
Advanced Nutrition	✓		Nutrition biochemistry
Nutrition Metabolism for Public Health Nutritionists		✓	
Community Nutrition	✓		Entry-level skill development course
Summer Institute		✓	Advanced skill development
Public Health Nutrition	✓	✓	
Food Systems Management	✓		Required for dietetics entry
Clinical Practicum	✓		Required for dietetics entry
Community Practicum 1	✓		Required for dietetics entry
Community Practicum 2	✓		Required for dietetics entry
Worksite Practicum 1 (required)		✓	Major project at workplace
Worksite Practicum 2 (optional)		✓	Major project at workplace
Electives	Two to four electives	One or two electives	Depends on number of practica
Admission requirements	<ul style="list-style-type: none"> <li>● 4-year undergraduate degree in nutrition</li> <li>● Minimum Mid B average</li> <li>● English proficiency</li> <li>● Demonstrated interest in community/public health nutrition</li> </ul>	<ul style="list-style-type: none"> <li>● 4-year undergraduate degree in nutrition</li> <li>● Minimum Mid B average</li> <li>● English proficiency</li> <li>● 5 years of work experience</li> </ul>	
Total full credit equivalents (FCE)	10	5	
Time to completion	18 months–7 years	12 months–5 years	Flexible part-time options provided for both programmes

#### *Build on existing strengths and assets*

The THCU model also encourages planners to identify existing strengths and assets and optimize the use of these in programme development<sup>(14)</sup>. This led us to list tools and resources available to us. Tapping into ‘in-house’ expertise in online course development helped orient us to new ways of approaching teaching and learning. Incorporating existing courses into the programme enabled us to provide ‘tried and true’ content while experimenting with new ideas, such as the incorporation of electronic portfolios for students to document their work. It also allowed us to use limited funds to develop the more unique aspects of the programme such as the worksite practicum project and summer institute. Table 4 outlines the course components of both the pre-existing and the new programmes.

#### *Identify desired outcomes*

Identifying learning outcomes is considered to be a major component of developing learning-centred curricula<sup>(33)</sup>. Our long-term objectives attempted to provide vision and direction, while our shorter-term objectives were supported by directly measurable outcome indicators so that we could monitor the programme in progress and make changes early if need be. For example, by monitoring the number of applicants each year from northern and rural communities, we will be able to determine whether or

not we are reaching our target audience and adjust our programme and promotional strategies accordingly.

#### *Acknowledge that changes will need to be made and plan to monitor*

Approaching programme development as a work in progress supports flexibility and the ability to refocus attention where and when it is needed. For example, early programme approval necessitated that we ‘fast-track’ some of the extensive curriculum design review that we had intended, in order to meet a moved-up start date. By viewing the curriculum as dynamic, we continually sought student feedback through questionnaires, focus groups and informal discussions as the programme unfolded. This approach enabled students to not only evaluate the programme and their learning experiences at frequent intervals, but also to proactively contribute to the design of what would come next for them and for others. The first group of students was especially influential in shaping the content and delivery of the programme that was offered to the subsequent cohort, and valued the opportunity to help evolve the programme.

Fraser and Greenhalgh encourage educators to educate not only for competence (‘what individuals know or are able to do in terms of knowledge, skill and attitude’, p. 799) but also for capability (the ‘extent to which individuals can



adapt to change, generate new knowledge and continue to improve their performance', p. 799)<sup>(34)</sup>. They suggest that the latter is brought about by processes that support learner engagement in goal setting, reflection, continuous feedback and improvement, and educational methods that avoid prescriptive content<sup>(34)</sup>. While the flexibility and high degree of involvement of students in creating the curriculum were originally intended as interim measures to see us through the initiation phase of the programme, they will remain in place for incoming groups of students to foster learning approaches that bring about both 'competent' and 'capable' graduates.

#### Impact on students

Initial data suggest the programme is addressing workforce development objectives. The ten initial students (all female) will have completed the programme at various paces ranging from 12 months to one who will take 5 years to complete. This reflects a wide range of learning needs and competing demands. Of the eight students who have completed the programme, all have experienced enriching work opportunities. Five graduates have benefited from advancement and/or new project opportunities within their existing workplaces, while three have pursued opportunities in new places of employment. One graduate was an international student from Brazil who pursued the programme specifically to acquire expertise for her role in her home country. All ten students are currently working in roles related to public health nutrition. Six students work in local public health units or regional health authorities (three in northern or rural communities), one works at the provincial government level, one at the federal government level and one in the private food service sector. Like their American counterparts<sup>(31)</sup>, students in these cohorts have identified employer support as a key determinant of their success and we have commenced a study to explore employer perspectives. Understanding student support is a key next step and monitoring of student outcomes will form a major component of our long-term evaluation strategy.

#### Conclusions

Planning a new graduate programme in Public Health Nutrition within a short timeframe presented challenges and opportunities. While extensive data gathering to inform decision making was not always possible, involvement of enrolled students in programme design proved advantageous in meeting their needs. Establishing an advisory committee and involving instructors from the field optimized use of existing resources and grounded the curriculum in the professional development needs of the workforce and of students. The THCU programme planning model provided a useful framework that was well understood by stakeholders and provided a common

perspective that facilitated planning. Preliminary data suggest that graduates are benefiting from their educational experiences. Ongoing programme evaluation will provide further insights into the effectiveness of our efforts.

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