

ORIGINAL RESEARCH

Strengthening the rural dietetics workforce: examining early effects of the Northern Ontario Dietetic Internship Program on recruitment and retention

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ABSTRACT

Introduction: As with other allied health professions, recruitment and retention of dietitians to positions in rural and isolated positions is challenging. The aim of this study was to examine the early effects of the Northern Ontario Dietetic Internship Program (NODIP) on recruitment and retention of dietitians to rural and northern dietetics practice. The program is unique in being the only postgraduate dietetics internship program in Canada that actively selects candidates who have a desire to live and work in northern and rural areas. Objectives of the survey were to track the early career experiences of the first five cohorts (2008–2012) of NODIP graduates, with an emphasis on employment in underserved rural and northern areas of Ontario.

Methods: NODIP graduates (62) were invited to complete a 27-item, self-administered, mailed questionnaire approximately 22 months after graduation. The survey, reflecting issues identified in the rural allied health and dietetics literature, documented their work history, practice locations, employment settings, roles, future career intentions and rural background. Aggregated data were analyzed descriptively to assess their early work experiences, with a focus on their acceptance of positions in rural and northern communities. Items also assessed professional and personal factors influencing their most recent decisions concerning practice locations.



Results: Three-quarters of graduates chose organizations serving rural or northern communities for their first employment positions and two-thirds were practicing in rural and underserved areas when surveyed. Most worked as clinical, community health or public health dietitians, in diverse settings including clinics, hospitals and diabetes care programs. Although most had found permanent positions, working for more than one employer at a time was not uncommon. Factors affecting practice choices included prior awareness of employers, prospects for full-time employment, flexible working conditions, access to interprofessional practice and continuing education, as well as community and family concerns. Intentions to remain in current positions were also shaped by a mixture of professional and personal considerations. Some would relocate in search of opportunities for specialization; a few would leave due to dissatisfaction with employment conditions and disinterest in work; others would move due to personal and family commitments.

Conclusions: This study provides early evidence that the NODIP distributed and community-engaged learning model has been very successful in its goal of augmenting the rural and northern dietetics workforce, with a majority of graduates accepting and remaining in rural positions during their first 2 years of practice. Whether graduates remain in rural practice, however, depends on a number of other factors, including career aspirations, availability of professional supports and personal commitments. This suggests that additional supports, above and beyond the NODIP internship, may be needed to encourage graduate dietitians to stay in rural and northern practice locations over the longer term.

Key words: Canada, dietetics, education and training, rural workforce, underserved areas.

Introduction

Background

As is the case in Australia¹ and the USA², the number of dietitians in small towns and rural areas in Canada is believed to be insufficient to meet population needs³. Although the exact number of vacancies is not known, the shortage is severe in rural, northern and Aboriginal communities, where chronic conditions such as diabetes are prevalent^{4,5}. Available information indicates that new graduates who accept employment in rural and northern Canada often do not stay long, and when they leave it can take many months to secure replacements⁶. Many are reluctant to accept rural positions because of perceived pay inequities, limited career prospects and challenges of work with high-risk populations⁷. Some feel inadequately prepared for the broader scopes of practice required by the interprofessional teams that deliver care in rural hospitals⁸ and primary care clinics⁹.

Need for dietitians in Northern Ontario

The northern Ontario region of Canada, with a population of approximately 800 000 distributed over 1 036 000 km²^{10,11},

has historically had difficulties recruiting and retaining health providers¹². Although postgraduate programs preparing family physicians¹³ and rehabilitation professionals¹⁴ were established more than two decades ago with the aim of increasing knowledge of rural and northern practice and commitment to work in underserved areas, similar opportunities for dietitians did not exist.

In 2006, a survey funded by Dietitians of Canada to assess need and capacity for an internship program demonstrated persistent gaps in the northern dietetics workforce¹⁵. While 167 dietitians were practicing in the region, 45 positions had been vacant for more than a year; an additional 13 positions had been filled by personnel with lesser qualifications. Retention was an equally serious concern. A quarter of the 102 dietitians surveyed intended to leave their positions in the next 2–5 years and more than half were planning to retire within 10–15 years. Although the needs assessment has not been repeated, anecdotal evidence suggests that recruitment and retention issues remain a concern in northern regions, particularly in smaller communities and isolated locations.



The Northern Ontario Dietetic Internship Program

The Northern Ontario Dietetic Internship Program (NODIP), managed through the Northern Ontario School of Medicine (NOSM), with campuses located at Lakehead University (Thunder Bay) and Laurentian University (Sudbury), is the only postgraduate dietetics internship program in Canada that actively selects candidates who have a desire to live and work in northern and rural areas¹⁶. Since inception, NOSM's social accountability mandate and commitment to community-engaged and distributed education have been reflected in the way that NODIP delivers its program, the degree to which the program is successful in preparing graduates for rural practice, and whether graduates accept positions in the north¹⁷.

Using the NOSM distributed learning model, interns receive most of their education in clinical, public health, community and food service management sites. The academic and practical curriculum gives dietitians the skills to practice in diverse settings, with additional cultural competence skills related to Francophone and Indigenous health. Interns, mentored by more than 150 preceptors, receive the majority of their 46-week training in one of four principal northern Ontario teaching sites.

To ensure that they are exposed to the realities of non-urban practice, the program requires interns to travel outside of their principal sites for at least one rural placement of 4–8 weeks. Many choose to complete two or more rural placements, working with preceptors in small community hospitals, family health teams, Aboriginal health centers, community health centers, diabetes programs and organizations serving Indigenous and Francophone populations. Learners work in teams of two on assigned practice-based research topics throughout the internship year.

Methods

Data collection and analysis

A 27-item questionnaire, based on a scan of the rural allied health literature, was developed by the Centre for Rural and

Northern Health Research at Lakehead University in collaboration with NODIP management¹⁸. The survey explored graduates' employment immediately following internship, documenting where they were practicing, the positions they held, and how practice factors, community and family concerns affected career decisions. Opinions regarding practice, community and family influences were assessed using a five-point Likert-response format, with higher values indicating greater importance (1='not important', 2='somewhat important', 3='important', 4='very important' and 5='extremely important'). An inapplicable category was provided and a supplementary item allowed ranking of 'top three' practice and community factors. Additional questions documented career intentions over the next 5 years, reasons for relocation, and 'ideal' practice locations.

To facilitate analysis, demographic factors, including gender, age, marital status and experience living in rural communities, were recorded. The questionnaire was mailed to each cohort approximately 22 months after graduation, with follow-up mailing 3 weeks later.

As cohort sizes were too small to permit cross-cohort comparisons, data from all five cohorts were aggregated and analyzed descriptively, using frequency and multiple response procedures available in Statistical Package for the Social Sciences v22 (SPSS; <http://www.spss.com>). For the purposes of this article, Likert-format items assessing practice location decisions were analyzed categorically¹⁹, with modal responses and ranges highlighted to identify the most common responses and convergence or divergence of opinions²⁰.

Ethics approval

The study was reviewed and approved annually by the Lakehead University Research Ethics Board (REB #022 13-14), with the most recent ethics approval received on 1 June 2015.



Results

Participants

This article describes results of a survey examining early career experiences and intentions of the first five cohorts (2008–2012) of NODIP graduates. Fifty-eight of the 62 graduates (94%) completed the survey. They ranged in age from 23 to 50 years at completion of their internship (mean age = 26 years).

Two-thirds ($n=39$, 67%) of NODIP interns were recent university graduates, aged 23–25 years. Twelve had completed bachelor's degrees in other disciplines prior to completing their undergraduate nutrition education. One-third ($n=19$, 33%) had acquired additional qualifications since graduation, including Masters degrees in nutritional science ($n=4$), and certifications in diabetes education ($n=14$), sports/fitness nutrition ($n=4$) and dysphagia assessment ($n=1$).

All of the NODIP graduates were female. Half were married or in a common law relationship ($n=27$, 50%) and most lived in the same community as their partners. Seven had partners or spouses working or going to school in other towns, an average of 100 km distant; some worked as much as 400 km away.

Recruitment

Finding first positions: Most NODIP dietitians secured a position during internship ($n=40$, 68%) or within a few months of graduation ($n=17$, 29%). Closer examination of work histories, however, revealed that less than half were able to secure ongoing employment with their first position. Other dietitians accepted available work, typically part-time or short-term contracts (such as maternity leave replacements). The rest moved on to other positions, most before their first year of practice ended.

A total of 25 graduates were fortunate in finding continuing employment with their first position (43%). Another 26 had held two positions since graduation (45%). Twelve individuals, however, had more complicated work histories, reporting a sequence of three, four, five or six limited-term positions. The 32 dietitians who subsequently accepted other employment remained in their 'first contracts' for an average of 10 months.

Although reasons varied, 'end of contract' was the most-often cited reason for seeking new employment ($n=17$). Others left their employers when 'full-time permanent positions' or positions in their 'preferred practice areas' became available ($n=10$). Some moved when dissatisfied with working conditions ($n=8$), citing 'job stress, excessive workloads, inadequate compensation, skill sets not being utilized, or too much travel'.

Some NODIP graduates changed employers for personal reasons ($n=11$). These included moving back to their home towns ($n=4$), moving to be closer to a partner's place of employment ($n=4$) and relocation to larger cities because they didn't enjoy life in an isolated location or chose to pursue graduate education ($n=3$).

Choosing rural and northern employment: NODIP's strategy of selecting and training dietitians who have a desire to live and work in northern and rural regions appears to have been very successful in the short term in encouraging graduates to join the workforce in underserved areas. Three-quarters found their first positions in such areas, an indication of their level of comfort with working in non-urban settings. The data emphasizes the importance of the NODIP placement regions as a source of employment. Three-quarters of NODIP graduates ($n=45$, 78%) chose positions in rural or northern communities designated as 'underserved' by the provincial government. All but one of the rural or northern positions was situated in the four NODIP placement regions.

Two dietitians who relocated to other provinces immediately after graduation accepted employment with organizations



serving rural communities. More than half of graduates ($n=33$, 57%) began their careers in non-metropolitan areas with populations less than 100 000. A quarter found their first positions in very small rural settlements (population up to 4999) ($n=10$) or towns (population 5000–9999) ($n=4$).

Finding full-time employment: Almost all NODIP graduates were successful in finding full-time positions; only a few reported holding part-time or relief/casual positions when surveyed. While most held only one principal position, working with two or more organizations was not uncommon: two years after graduation, 51 graduates (88%) held full-time positions, 43 were permanent and eight were non-permanent. Ten dietitians held part-time positions; four graduates also reported employment in relief, casual or occasional positions. While 45 dietitians (78%) worked exclusively for one employer, 13 worked for two or more employers. Seven simultaneously held a combination of full-time, part-time and/or relief/casual/occasional positions.

Three-quarters ($n=41$, 74%) self-identified as clinical dietitians; one-third ($n=23$) were community or public health dietitians. Others were administrators, managers, private practitioners or educators. One-half worked in health centers ($n=30$, 52%), including family health teams, community health centers, Aboriginal health centers, nurse-practitioner clinics or outpatient clinics. Employment in rural and urban hospitals ($n=23$) and diabetes care programs ($n=20$) predominated. Relatively few worked in long-term care, home care or private practice.

Knowledge of employers and incentives: Prior awareness of employers, gained by completing an internship with an employer or knowing people who worked with them, more than incentives, seemed to exert a strong influence on graduates' most recent practice choices: two-thirds ($n=38$, 66%) had knowledge about their employer prior to accepting their most recent position. A third had completed internship placements; some had gained knowledge of the employer through prior work in non-dietetic roles or volunteer positions. Only 13 dietitians were offered incentives, typically reimbursement of membership

or education costs; with one exception, incentives were tied to northern or rural positions. Two were given work-related travel allowances and three received retention bonuses.

Retention

Remaining in rural and northern practice: Although the small numbers of dietitians receiving incentives precluded exploring links between incentives and retention, practice location data revealed that NODIP graduates continued to be strongly interested in rural and northern practice. Most graduates who initially accepted a first position in northern placement regions were still employed there when surveyed. As well, NODIP dietitians continued to be drawn to smaller towns and rural communities.

Two-thirds of NODIP graduates ($n=37$, 69%) were working in underserved communities that had long-standing difficulties attracting healthcare professionals. Three were working with organizations serving Indigenous rural and remote communities. The NODIP placement regions represented a significant source of employment that attracted and retained new graduates. All but 5 of 44 graduates who accepted a first position in the placement regions were still working in the northern regions when surveyed. Reflecting the reality that many of the employment opportunities for dietitians were short-term contracts (such as for maternity leave), moving from one position to another and from one place to another was common: 15 held a sequence of positions in the same community and nine relocated from one place to another.

Almost three-quarters of NODIP dietitians ($n=32$, 73%) were practicing in non-metropolitan areas with populations of less than 100 000. Eleven served rural areas with up to 4999 residents; four worked in settlements with fewer than 1500 residents. Six were employed in small towns (5000–9999), two in large towns (10 000–24 999) and 13 in regional centers (25 000–99 999).

Professional factors affecting location choices: Responses emphasized that graduates valued positions



offering full-time work, high quality environments, education and professional development. Most sought work in their preferred practice areas, along with opportunities to acquire broad experience and specialized skills. Looking at factors rated 'very' or 'extremely' important: almost all dietitians sought positions offering full-time employment ($n=55$, 95%) on a permanent ($n=36$) or non-permanent ($n=19$) basis. Three-quarters wanted high quality work environments ($n=45$) that gave them access to continuing education ($n=43$) and professional support ($n=41$). Many were attracted to work in their preferred practice areas ($n=35$, 60%), acquire broad experience ($n=34$) and gain experience in interprofessional environments ($n=31$). When graduates were asked to identify their 'top three' factors, however, only full-time permanent employment ($n=33$, 57%) and preferred practice areas ($n=20$, 34%) were consistently reported.

Community and family factors influencing practice choices: Although opinions varied, NODIP graduates indicated that locations close to family and friends and gave opportunities for spousal employment and personal education were attractive. Their comfort with particular towns, physical environments and cultural or recreational opportunities affected location decisions: being close to family ($n=32$, 55%), as well as home towns ($n=27$), and having friends nearby ($n=26$), were factors viewed as being 'very or extremely' important. Similar value was placed on prospects for employment of a partner or spouse ($n=27$) and professional education ($n=26$).

Graduates favored towns in which they felt comfortable, lifestyles they liked and quality physical environments ($n=30$, 52% for each). Some were attracted to cultural and recreational amenities ($n=26$). When asked to rank the 'top three' community and personal factors, however, only proximity to family ($n=36$, 62%) and desire to live in home towns ($n=27$, 47%) were prominent. Lifestyle factors were ranked 'very important' or 'extremely important' by very few graduates.

Career intentions and reasons for relocation: Although some dietitians did not yet have firm career plans, close to half of NODIP graduates expected they would stay in

their current positions for an extended period of time. Those who would relocate would do so for a complex mixture of professional and personal reasons: almost half of graduates ($n=24$, 41%) intended to remain in their positions over the longer term: some would stay 2–5 years ($n=11$); others would stay 6 years or more ($n=13$). Only a third ($n=19$, 33%) expected they would change employers in less than 2 years. The rest did not know what directions their careers would take ($n=15$). Those who expected to leave cited professional growth ($n=13$), end of contracts and unavailability of other work ($n=12$), along with dissatisfaction ($n=8$) and disinterest ($n=8$). Some dietitians would leave their current employer and present community due to anticipated relocations of partners ($n=9$) or desire to be closer to family and friends ($n=9$).

'Ideal' practice locations and rural backgrounds: Although graduates had varying opinions about the 'ideal' size of community in which they would like to practice, most resided in places that matched their preferred populations. Using a definition of 'rural backgrounds' as having lived in 'non-metropolitan' areas with populations less than 100 000 during childhood or adolescence²¹, those with rural backgrounds were particularly open to practicing in less populous communities: two-thirds ($n=38$, 66%) were currently practicing in communities that were similar in population to their ideal. A minority liked larger ($n=14$) or smaller ($n=17$) towns. Three-quarters ($n=43$, 74%) were interested in working in non-urban areas, with populations less than 100 000. Overall, 34 of 41 dietitians with rural backgrounds (83%) preferred non-urban areas; only 5 of 17 graduates raised exclusively in urban areas (29%) had similar preferences.

Discussion

Across the health professions, rural placements and internships have been shown to increase interest in rural practice and improve the numbers of students who choose a rural first-practice location²². These give students opportunities to explore the range of practice options available in smaller communities²³ and confirm or disconfirm



intentions around practicing and living in non-urban areas²⁴. This tracking study aimed to discover whether NODIP was an effective strategy for improving the dietetics workforce in underserved regions of Ontario.

Recruitment

To a large extent, the survey of NODIP graduates established that NOSM's community-engaged learning model²⁵ was extremely successful for augmenting the dietetics workforce in Ontario's northern and rural regions. Three-quarters of NODIP graduates accepted first positions in rural and northern communities and, almost 2 years later, two-thirds were still working in underserved areas. This suggests that the internship, like comparable programs for family physicians²⁶ and rehabilitation professionals²⁷, has had positive impacts on recruitment of dietitians to rural areas. As several graduates have been employed by Aboriginal organizations, NODIP has contributed to filling gaps in the workforce serving rural and remote Indigenous communities²⁸.

The early success of the NODIP program in preparing graduates for practice in rural and northern communities adds to the literature underscoring the importance of rural placements as a recruitment tool for dietitians²⁹ and other allied health professionals³⁰. Placements in isolated northern³¹ and Indigenous communities³² have similar effects.

Given that NODIP graduates spend a minimum of 4–8 weeks in diverse rural settings, results indirectly support the notion that longer rural placements and internships are especially beneficial. As other studies demonstrate, extended placements give students a more realistic view of the types of practice available in non-urban areas and expose them to the lifestyle options available in smaller communities³³. Lengthier placements can strengthen intentions to practice rurally³⁴. For dietitians, the practical knowledge and experience gained during rural placements offsets the perceived disadvantages of accepting first positions in isolated rural areas³⁵.

Retention

Overall, the fact that 39 of 44 NODIP dietitians who accepted first positions in placement regions are still working in the north indicates that the short-term retention of NODIP graduates is slightly better than found among rural dietitians in other countries, such as Australia³⁶ and the USA³⁷. The most recent workforce surveys from Australia, for example, found that one-half of dietitians recruited to rural practice remain for only 18 months³⁸. Many make a decision to move elsewhere several months before their first year of employment is completed³⁹.

At the same time, NODIP graduates who had moved or intended to relocate would do so for the complex mixture of professional and personal reasons that affect the retention of rural dietitians elsewhere⁴⁰. The evidence that many dietitians changed employers due to end of contract or desire for professional growth and specialization, for example, underlines the message that that full-time permanent positions as well as opportunities for continuing professional education are among the factors that would encourage them to remain in rural practice⁴¹.

From a personal perspective, the participants' desire to change communities to be closer to family and friends or spousal employment indicates that dietitians, like women in other female-dominated professions, are somewhat constrained in choosing rural practice locations. Surveys of women in the allied health professions similarly concluded that spousal or partner employment opportunities and family connections often dictate the choice of rural practice locations for female allied health professionals, both earlier and later in careers^{42,43}.

The fact that three-quarters of graduates preferred to work in non-urban towns and rural areas, moreover, aligns with the literature suggesting that many rurally trained health professionals consider practice in smaller communities as a viable option for later in their careers⁴⁴. Urban practice first, rural later, also represents a practical solution for



professionals who want to work in rural areas but desire the specialized skills training only available in urban areas⁴⁵.

Last but not least, the study adds to the accumulating evidence that rural background is the strongest predictor of health professionals choosing rural practice locations^{46,47}. This study's findings, which revealed that NODIP graduates who lived in rural towns during their childhood or adolescence are more inclined to choose and intend to remain in rural practice, confirm the same is true of dietitians: those who come from rural backgrounds more often work rurally⁴⁸.

Conclusions

Taken together, this evaluation of the early career experiences of the first five cohorts of NODIP suggests that the internship has been successful in its aim of attracting candidates who have a desire to live, work, understand and address the health needs of northern and rural regions. It found that a majority of dietitians who graduate from NODIP accept positions in rural and northern areas and remain there during their first 2 years of practice. Whether graduates remain in rural practice, however, depends on other factors, including career aspirations, availability of professional supports and personal commitments. This suggests that additional supports, above and beyond the internship, may be needed to encourage graduates to remain in rural and northern practice over the longer term.

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