Value of a regional family practice residency training program site

Perceptions of residents, nurses, and physicians

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Abstract

Objective To examine the perceptions of residents, nurses, and physicians about the effect of a regional family practice residency site on the delivery of health services in the community, as well as on the community health care providers.

Design Interviews and focus groups were conducted.

Setting Nanaimo, BC.

Participants A total of 16 residents, 15 nurses, and 20 physicians involved with the family practice residency training program at the Nanaimo site.

Methods A series of semistructured interviews and focus groups was conducted. Transcripts of interviews and focus groups were analyzed thematically by the research team.

Main findings Overall, participants agreed that having a family practice residency training site in the community contributed to community life and to the delivery of health services in the following ways: increased community capacity and social capital; motivated positive relationships and attitudes in the hospital and community settings; improved communication and teamwork, as well as accessibility and understanding of the health care system; increased the standard of care; and facilitated the recruitment and retention of family physicians.

Conclusion This family practice residency training site was beneficial for the community it served. Future planning for distributed medical education sites should take into account the effects of these sites on the health care community and ensure that they continue to be positive influences. Further research in this area could focus on patients' perceptions of how residency programs affect their care, as well as on the effect of residency programs on wait times and workload for physicians and nurses.

EDITOR'S KEY POINTS

- This study explored what changes, if any, had occurred since the implementation of a residency training program in the community of Nanaimo, BC, from the perspective of residents, nurses, and physicians.
- Overall, participants agreed that having residents in the community had several positive effects on the delivery of health services, the Nanaimo community, and the other community health care providers.
- This study illustrates that future planning for distributed medical education sites should take into account the effects of a residency training site on a community. These effects include increases in social capital and resources, as well as benefits in terms of recruitment and retention of health service providers.

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L'avantage d'un programme de résidence en médecine familiale en région

Ce qu'en pensent les résidents, les infirmières et les médecins

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Résumé

Objectif Déterminer ce que les résidents, les infirmières et les médecins pensent de l'effet de la présence d'un site régional de résidence en médecine familiale sur la prestation des services de santé dans la communauté de même que sur le personnel soignant de la communauté.

Type d'étude On a utilisé des entrevues et des groupes de discussion.

Contexte Nanaimo, Colombie-Britannique.

Participants Un total de 16 résidents, 15 infirmières et 20 médecins qui participaient au programme de formation des résidents en médecine familiale à Nanaimo.

Méthodes On a utilisé des entrevues semi-structurées et des groupes de discussion. L'équipe des chercheurs a analysé les transcrits de ces rencontres pour en extraire les thèmes.

Principales observations Dans l'ensemble, les participants étaient d'avis que le fait d'avoir un site de résidence en médecine familiale dans la communauté contribuait à la vie de la communauté et à la prestation des services de santé de la façon suivante : en augmentant le capital social et la capacité de la communauté; en favorisant des relations et des attitudes positives dans les milieux hospitaliers et communautaires; en améliorant la communication et le travail d'équipe, de même que l'accessibilité aux soins et la compréhension du système de santé; en augmentant la qualité des soins; et en facilitant le recrutement et la rétention des médecins de famille.

Conclusion Le fait d'avoir des résidents en médecine familiale dans un tel milieu a été avantageux pour la communauté. On devrait tenir compte de ces avantages pour les soins de santé lors du choix des futurs sites de formation médicale, tout en s'assurant qu'ils aient toujours une influence positive. Les études futures dans ce domaine devraient vérifier ce que les patients pensent de la façon dont les programmes de résidence affectent les soins, mais aussi de l'effet de ces programmes sur les temps d'attente et sur la charge de travail des médecins et des infirmières.

POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude voulait savoir si, aux dires des résidents, des infirmières et des médecins, la mise en place d'un programme de résidence dans la communauté de Nanaimo, en Colombie-Britannique, avait ou non entraîné des changements.
- Les participants étaient généralement d'avis que la présence de résidents dans la communauté avait plusieurs effets positifs sur la prestation des services de santé, sur la communauté de Nanaimo et sur les autres soignants de la communauté.
- Cette étude montre qu'on devrait tenir compte des effets de la présence de résidents dans une communauté lorsqu'on planifie les futurs sites de formation médicale. Les effets escomptés comprennent une augmentation des ressources et du capital social ainsi que des avantages en termes de recrutement et de rétention du personnel soignant.

Cet article a fait l'objet d'une révision par des pairs.
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The University of British Columbia (UBC) Faculty of Medicine postgraduate training program provides a community-based family practice residency program for its residents in Nanaimo, BC. By documenting the perspectives of residents, nurses, and physicians, we explored the ways in which a family practice training site can add value to communities where these residency sites exist.

Family practice residents have a spectrum of direct and indirect supervision while providing care to patients. For example, when it is safe and appropriate, a resident is able to provide care with indirect supervision or off-site. Residents might have placements in community clinics or hospital settings and act quite independently, with assistance available when needed. The Nanaimo site includes a regional hospital, outpatient clinics, and community-based clinics. We use the definition of *distributed postgraduate medical education* (DPME) proposed by Bates et al: "[A]ny instance where the education of medical residents occurs outside of the academic health science centre."[1] In Nanaimo, community resources are used to ensure that residents' training includes a wide exposure to inpatient, outpatient, and community health needs.

The residency program in Nanaimo is based in the regional hospital directed by a GP with an active community-based practice. As the program is in its infancy, assessing outcomes such as the effect of the program on students and the surrounding community is premature. However, by documenting the observations and perceptions of the residents and other health professionals involved, we were able to gain valuable and unforeseen insights about the effect of the program to date. A review of the literature indicated that most studies focused on attainment and transfer of knowledge and skills, curriculum structure, learning objectives, and effects on students' attitudes and career choices. Along with the effects of this residency training site on residents, our research focused on the effects of the distributed medical education program on other health professionals and the involved faculty. This was important to consider because of their key roles as the modifiers and animators of what happens to residents during training.

Review of the literature

Community-based medical education has a positive effect on the attitudes of medical students while providing them with exposure to real-life experiences and learning environments.[2-9] Also, these programs potentially increase the number of students choosing rural practice.[10-12] Despite early concerns, those completing residencies based in community or regional hospitals perform equally well academically as those residents who do their placements in tertiary hospitals.[13-15] Overall, most students graduating from community settings believe that their learning fit their expectations and they believe that they are prepared for entry into their field.[16-19]

Community-based medical education programs increase the number of medical students interested in family medicine and contribute to instilling clinical, social, and interpersonal integrity in their graduates.[4,8] A study examining the nature of community involvement of professionals in departments of family medicine in the United States indicated that most (95%) of them were involved in some element of community-related service.[20] This implies that increasing the number of residents entering into family practice could have additional benefits for the community. While much of this literature was focused on undergraduate medical students, a small number of studies explored the experiences of residents and supported the finding that the site of training was a considerable factor in the selection of future practice locations.[21,22]

Several articles on distributed medical education sites discuss the UBC medical program specifically.[11,23,24] Most articles focus on the administrative and structural changes to the program and the development of its distributed sites. Lovato and colleagues—who performed the only study to approximate our research on the effects of distributed medical education at the community level—suggest that hosting medical programs in rural sites might contribute to the development of social capital.[11] However, their study is functionally a pilot study with a small sample of 8 "key informants" drawn from different sectors of the community. While their study introduces an intriguing perspective, it does not identify the perceptions of those who work directly with and in the residency program or of other community health providers.

Purpose and expectations

In this study, we examined one residency site (Nanaimo), exploring what changes, if any, had occurred since the implementation of the program, from the perspective of residents, nurses, and physicians. We explored the hypothesis that having residents in the community might have a number of positive effects related to the delivery of health services, as well as more general benefits to the community of health care providers.

METHODS

Qualitative data were collected through a combination of individual and group interviews with nurses (20 to 30 minutes in length) and 3 focus groups (1.5 hours in length); 2 focus groups were with physicians (10 participants in each group) and 1 focus group was with 16 residents (8 first-year residents and 8 second-year residents). An extensive ethics approval process ensued owing to the necessity of review by both UBC and Vancouver Island University.

Sample size and recruitment

As the cohort size at Nanaimo was small (2 cohorts of 8 residents a year), recruitment was possible through residents' academic week program. All residents (100%) agreed to participate in the study. Physicians, who were recruited through e-mail and direct invitation after the focus group was advertised, were invited to participate in 1 of 2 focus groups. Of the 60 physicians involved in the program, 20 (33%) of them responded. Nurses who worked directly with the residents were also recruited through the e-mail advertisement and were invited to participate in face-to-face interviews. Of the 30 nurses who worked in the Nanaimo Regional General Hospital, 15 (50%) responded. Therefore, a total of 51 health practitioners participated.

Process

Residents were sent consent forms, background material, and the questions for the research by e-mail, and were invited to participate in a focus group conducted during their academic block time. Physicians were given consent forms and copies of the questions when they arrived for their focus group that was held off-site. Nurses who worked directly with the residents participated in one-on-one or group semistructured interviews, with informed consent given at the beginning of the interview. All interviews and focus groups were audiotaped. The interview and focus group questions (**Boxes 1** and **2**) centred on perceived effects of the program.

Data analysis

Data from the interviews and focus groups were fully transcribed and then analyzed thematically by a research team that comprised physicians and academic investigators: 3 physician investigators and 6 investigators from Vancouver Island University. Stages of analysis proceeded as follows. Each of the university investigators read the transcripts individually and developed basic first-level themes according to the procedures of qualitative interview analysis described by Van Manen[25] and Kvale.[26]

Box 1. Focus group questions for residents

Focus group questions for residents included the following:

- How do you think the residency program affects the health of the community as a whole? Can you provide an example?
- How do you think having residents on-site in the hospital and in medical offices affects the health of the community?
- How do you think the community perceives the program?
- If you were starting the program from scratch, what specific things might you add or modify to enhance the value of the program for the health of the community?

Box 2. Interview or focus group questions for physicians and nurses

Interview or focus group questions for physicians and nurses included the following:

- How are you involved with the Nanaimo family practice residency site?
- With regard to the benefit to the community, do you think that the residency program has influenced your practice? In what ways? Have residents had any effect on the quality and quantity of care provided in your practice?
- With regard to the benefit to the community, do you think that the residency program enhances the reputation of the hospital in the local community? How or why not? Can you describe other ways that the residency program benefits the community?
- Is there anything you would like to see changed or improved about the residency program to enhance the quality of care in the community? Or do you have any other suggestions for improvement?

These procedures are described over several chapters and cannot be summarized in this limited space; however, the basis of the approach is validation through extensive dialogue, discussion, and critique. During the 3 meetings, the research team members engaged in facilitated discussions to group basic themes into clusters of similar issues and broader themes that added meaning and indicated importance. Kvale[26] describes this as creating valid knowledge statements by debating conflicting knowledge claims in dialogue.

Having the advantage of a diverse team, we were able to create 2 "communities of validation."[26] First, the academic researchers analyzed the themes individually and then discussed their results as a group. Next, the academics discussed the themes with the physicians who clarified and refined the themes. Themes were not separated by participant group, as our main concern was triangulation of perspectives; that is, we asked questions of the 3 types of participant groups about the same issues. In this way our themes could be verified, falsified, or clarified, as well as expanded upon, through the different perspectives. At the same time, if there was a unique perspective, for example from the nurses alone, this was noted.

FINDINGS

In our study, the response and participation rates were as follows: 100% of residents, 50% of nurses, and 33% of physicians who were affiliated with the program. These rates reflect the availability of each member group and the suitability of the method for the time period. The

residents were preassembled in groups in academic block time; the nurses were available for brief individual or group interviews in the hospital setting; and the physicians were brought together after a dinner meeting for a focus group.

The themes that emerged from the data analysis were contributions to social and material resources in the community, expanded knowledge and perspective brought to practice settings, relationships and attitudes in the hospital and community clinical settings, communication and teamwork, accessibility and understanding of health care and the health care system, and physicians returning to the community to practise. These findings are presented in **Table 1**, with supporting quotations taken directly from the interviews and focus groups.

Throughout discussions, a number of recommendations were made for increasing or improving the effects of the Nanaimo residency site. These recommendations are summarized in **Table 2** and might be of interest to other distributed medical education sites.

DISCUSSION

Overall, participants agreed that the family practice residency training site added value to the quality of community health care in Nanaimo. They suggested a range of positive influences, indicating multiple benefits and spinoffs that have not usually been considered in assessing benefits of residency programs. Some studies discuss the positive influence of a DPME on attitudes, choice of practice site in the future, or social capital.[2-4,11] In our study, physicians in teaching roles said the program gave them an additional incentive to keep "up to date" and made them aware of the importance of an "added set of eyes" in practice and the benefits of residents having access to new knowledge. Nurses and physicians emphasized the value of having residents on-site, noting that residents improved communication by facilitating interaction among practitioners and promoting what was seen as enhanced interdisciplinary practice. Respondents explained that the partners and families of residents contributed to the community in ways that frequently went unrecognized. They emphasized the value of modeling healthy lifestyles in the community and the economic and social contributions, such as volunteering their time outside of their professional obligations.

Adding residents to the health care team has resulted in a primarily positive experience for all, especially in terms of relationships and attitudes in the hospital and clinic settings. While there was the possible consequence of teamwork and communication becoming more complicated, there was consensus that through practices of open communication and a responsive leadership team, the members of the residency program at the Nanaimo site dealt with the challenges of the transition in a very successful way.

Participants also agreed that the residency program might have had a positive effect on the accessibility of care in general, in the hospital, in the clinics where residents train, and in providing outreach services to patients who might not otherwise be seen. Although this research did not quantify the accessibility and quality of care, it clearly demonstrated that there was a perceived increase in the accessibility of care and a perceived improvement in the standard of care since the site became a teaching hospital. All participants agreed that the quality of care had either retained the same high standard or improved (residents and nurses suggested that the quality had improved, while physicians agreed that the quality of care had been maintained). All participants agreed that, with the addition of residents, there was a perception of an improvement in care.

According to participants, the hospital's increased academic profile facilitated physician and specialist recruitment and put the community of Nanaimo "on the map" for young doctors. In addition, physicians and nurses believe the program might have a positive effect on reducing workload and burnout.

The ultimate question of benefit to the community is that of permanency—that is, whether or not the residents choose to practise in Nanaimo after graduation. As this program had existed for only 2 years at the time of writing this article, there were not enough data to conclusively examine the effect of the program on the recruitment of physicians to the practice site in the future. However, of the 14 residents who graduated in the first 2 years of the program in Nanaimo, 11 (79%) have provided service to the community (as locums, etc), 2 (14%) now have full-time practices in Nanaimo, and 1 (7%) has remained in the community to fill a maternity-leave position. Over the next few years, more of the data collected will assist in determining the likelihood of other graduates returning to the community of Nanaimo to practise.

Limitations

Although study participants self-selected to participate, there is always a possibility that the results are skewed toward positive or negative comments. We sought to minimize this limitation through triangulation of the data—that is, by asking the same questions of various groups of practitioners in different ways. Triangulation is used in a similar way to the concept of saturation. In triangulation, when various groups of practitioners with different perspectives offer the same answers to the same questions, then we can have more confidence in the validity of the results. It is important to note that the sample size is relatively small, and results might not be similar in a larger city where hospitals and practices are larger and connections in the community might be more

Table 1. Themes and findings that emerged from the data analysis

THEME	FINDINGS
Contributions to social and material resources in the community	Many participants emphasized the value of the involvement of the residents in the community • Residents participate in clubs, coach sports teams, and engage in community fundraising, all of which directly benefit the community • "We all live here and work here; those we meet in other ways, we impact their lives and we spend our salaries here .... And now Nanaimo is investing a lot of money here as well ... the facilities, like the new simulator lab that is being built, probably wouldn't be here otherwise" (Resident) • The program provides a small but consistent economic gain for the community through contributions to the general economy
Expanded knowledge and perspective brought to practice settings	Participants across all groups described the variety of experience, knowledge, background, and interests brought to Nanaimo by the residents • There is value in having young physicians in the community. In practice, there are advantages to having fresh perspectives and "multiple sets of eyes" working with patients • Nurses noted an increase in interdisciplinary practice facilitated by the presence of residents
Relationships and attitudes in the hospital and community clinical settings	The nurses and physicians agreed that the residents recruited to the program had excellent attitudes and had a willingness to learn and be part of a team. This contributed to a very collegial environment in the hospital • Although several nurses suggested that having the residents in the hospital added another layer of complexity to working relationships, the benefits of having young, energetic, respectful doctors with positive attitudes were appreciated • Participants were in agreement that community members outside of the hospital appeared to be very accepting of the residents
Communication and teamwork	Participants, particularly nurses, believed that residents improved communication among care providers by introducing new knowledge to discussions and by facilitating interaction among practitioners • Nurses gave examples of residents informing the team of new developments in health care, contributing to journal clubs, assisting with examination preparation for immigrant doctors, and facilitating referrals to specialists • The approach of the leadership was instrumental to creating a team atmosphere at the hospital in Nanaimo. "[The leadership's] commitment to meeting with the nurses on a quarterly basis is the best possible thing they could have done for a smooth transition .... They are very good at listening, explaining, and following up [on concerns] if something is out of line" (Nurse) • Residents are available to spend time with patients, to listen, and to thoroughly explain things to them. "[Involving residents] has worked really well in terms of increased communication [between home care and the chronic pain management clinic] .... In the past we didn't always get medication changes in a timely fashion .... Residents have helped to address that gap" (Nurse)
Accessibility and understanding of health care and the health care system	According to participants, the most considerable effect of the residency program was the increased accessibility of health services and health information • All participants emphasized the greater amount of time that residents had to interact with patients • Nurses said that having residents available gave them easier access to physicians, allowing them to triage patients and to get referrals and new admissions to the hospital moving faster • Having residents on call at night was acknowledged as key in alleviating pressure for physicians and nurses • Residents on-site provide educational opportunities for patients. "As the doctor is explaining and teaching the resident, the patient is also having things clarified for them" (Nurse) • The age and sex of the residents might also increase accessibility. "In my clinic it's all male doctors except for when we [the 2 female residents] are there. So I see a lot of teenage girls who are more comfortable seeing one of us and [they tell us things] they might not tell their male physician ...." (Resident)
Excellence in care	There was consensus among the groups that having residents in the hospital had a positive effect on the quality of care • Physicians teaching residents must maintain high standards and stay up to date; teaching encourages physicians to view their practices with a more critical eye • Residents are able to interact with patients for a longer period of time, leading patients to perceive that the quality of care has increased • The designation as a teaching hospital has improved the reputation of the hospital, particularly in the academic community, and patients now assume that things are "cutting edge" • Wait times in clinics have decreased as a result of having residents on staff; in the hospital, residents are able to do consultations that might otherwise be put off until the next day • Some residents are able to follow up with their patients and this might increase continuity and quality of care • Nurses described residents' influence on practice as positive and negative, as there was now another layer of complexity in the management of care and a new group of learners that might decrease the learning opportunities of nursing students • Nurses did have concerns about the quality of care at night, particularly in the maternity ward when obstetricians had residents doing things that might have been outside of their scope of practice (by not coming in when they were called and leaving residents in charge)
Physicians returning to the community to practise	There was a strong sense among service providers that having a residency training site in Nanaimo might facilitate the recruitment of physicians to the area • "I think it's great that we have the residency training program here. I am sure that we will attract more GPs here that way; even the ones that go away, I think they might decide they want to come back here later in life" (Physician)

Table 2. Participants' recommendations for increasing the value of the Nanaimo residency training site

THEME	RECOMMENDATIONS
Contributions to social and material resources of the community	Both the residents and nurses recommended increasing the opportunities for residents to become involved in the local community (outside of the hospital)
Expanded knowledge and perspective brought to practice settings	Both residents and nurses suggested that more emphasis should be placed on matching residents to their specific clinical interests, and ensuring residents have access to a diverse patient population in their clinic placements
Relationships and attitudes in the hospital and in the community clinical settings	Residents recommended • assigning a group of patients to residents or creating a system to make it easier for residents to follow up with patients and build relationships; and • allowing residents to recruit patients Nurses recommended • organizing some sort of social activity or meet and greet with the residents in order to enhance the building of relationships within the hospital
Communication and teamwork	Residents recommended • increasing media coverage and improving communication about the program to the community outside of the hospital • having more opportunities for residents to be part of public health efforts in the community Nurses suggested • providing home-care nurses with increased information about the residency program • clarifying residents' schedules (for nurses), particularly so that they know who is on call Within the hospital, it was recommended that communication—including expectations, feedback, and assessment—in the program be improved
Accessibility and understanding of health care and the health care system	Nurses suggested • that the program should emphasize increasing the accessibility of primary health care for marginalized communities. For example, once a week residents could work at the shelter or the child development centre, or on First Nations reserves, thereby increasing the integration of the residents into the community • that residents do home visits for palliative care patients, as this would be advantageous for facilitating admission to hospital when a patient's health started to decline
Excellence in care	Nurses recommended creating an obstetric guideline for care between 12 AM and 6 AM Residents recommended increased opportunity for residents to follow up with patients whenever possible to increase continuity of care
Physicians returning to the community to practise	Residency sites encourage residents to return to the community to practise. All participants recommended increasing the engagement of residents in the community beyond the hospital

difficult. However, many of the findings might be transferrable or might resonate with other DPME sites. This research did not include interviews with members of the public owing to the ethical challenges of approaching the public and patients, but future studies exploring the perceptions of the public and patients would be interesting for further triangulation of these results or added insights. A recent study of rural clinical practices in Australia indicated similar results from patients' perspectives[27]; however, further research in this area is needed.

This study was a preliminary exploration of the benefits of a new residency program from the perspective of residents, nurses, and physicians. Once a larger cohort of residents has been through the program, there are several interesting avenues for further follow up. Future research could explore wait times and workload of residents. This might confirm some of the benefits of the program on aspects of health service delivery suggested by our participants. A longitudinal analysis of the frequency with which physicians stay in the community or return to the community after completing their program and their rationale for doing so would contribute to a greater understanding of the relationship between residency training programs and their host communities.

Conclusion

Extensive literature exists on the factors that influence where residency programs are established in Canada, the United States, the United Kingdom, and Australia,[1] and a worldwide trend toward DPME[28] is indicated. In a recent broad review of DPME sites, Bates and colleagues conclude that

> [W]e could benefit from a new conceptualization of DPME that incorporates large urban community-based hospitals and their surrounding communities

with its ambulatory care into an integrated network of urban academic teaching sites.[1]

Nanaimo provides an example of the potential effects of DPME sites in regional settings, noting the added value of allowing the resident to move between the community, the community-based hospital, and the academic setting as they follow patients.[1] Like the study by Lovato et al,[11] this research contributes to the literature on the added value of distributed medical education and indicates some of the specific ways in which this value is manifested.

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Contributors

Ms Fletcher contributed to the design of the research, the acquisition of the data, and the analysis of the data, created the first draft of the article, and revised the article to the stage of approval of the final version. **Dr Mullett** contributed to the conception and design of the research, as well as analysis of the data, was involved in revising the article for critically important intellectual content, and provided final approval of the version to be published. **Dr Beerman** contributed to the concept and design of the research, the acquisition of quantitative data related to physicians returning to the community to practise, and the interpretation of the data, and was involved in revising the article and providing approval of the final version.

Competing interests

None declared

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