Giving curriculum planners an edge

Using entrance surveys to design family medicine education

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Abstract

Objective To pilot a survey of family medicine residents entering residency, describing their exposure to family medicine and their perspectives related to their future intentions to practise family medicine, in order to inform curriculum planners; and to test the methodology, feasibility, and utility of delivering a longitudinal survey to multiple residency programs.

Design Pilot study using surveys.

Setting Five Canadian residency programs.

Participants A total of 454 first-year family medicine residents were surveyed.

Main outcome measures Residents' previous exposure to family medicine, perspectives on family medicine, and future practice intentions.

Results Overall, 70% of first-year residents surveyed responded (n = 317). Although only 5 residency programs participated, respondents included graduates from each of the medical schools in Canada, as well as international medical graduates. Among respondents, 92% felt positive or strongly positive about their choice to be family physicians. Most (73%) indicated they had strong or very strong exposure to family medicine in medical school, yet more than 40% had no or minimal exposure to key clinical domains of family medicine like palliative care, home care, and care of underserved groups. Similar responses were found about residents' lack of intention to practise in these domains.

Conclusion Exposure to clinical domains in family medicine could influence future practice intentions. Surveys at entrance to residency can help medical school and family medicine residency planners consider important learning experiences to include in training.

EDITOR'S KEY POINTS

- The experiences medical trainees have during medical school and residency affect their future practice choices. As part of the planned assessment of the College of Family Physicians of Canada's new Triple C Competency-based Curriculum, this pilot study aimed to assess new residents' exposure to family medicine during medical school, as well as their future intentions to practise.

- Although most residents believed they had strong or very strong exposure to family medicine during medical school, many reported minimal or no exposure to a number of clinical care domains that are key to the practice of comprehensive family medicine, including palliative care; care in the home; intrapartum care; care in long-term care facilities; and care provided to inner-city, rural, and aboriginal populations. Residents were also likely to report that they did not intend to provide care in these domains when they entered practice.

- Results of this survey suggest that learners in medical schools across Canada might have limited exposure to some of the domains of clinical care affiliated with the discipline of family medicine. Such information is important for those who plan undergraduate and postgraduate medical curricula in order to ensure that graduates of family medicine residency programs are prepared to practise comprehensive family medicine in any community in Canada.

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Suggestions pour les responsables du curriculum

Une enquête auprès des résidents-1 de médecine familiale en vue d'améliorer leur formation

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Résumé

Objectif Faire une étude pilote auprès des étudiants qui commencent leur résidence en médecine familiale pour connaître leur degré d'exposition à la médecine familiale et leurs intentions futures de pratiquer dans ce domaine, et ce, dans le but d'en informer les responsables du curriculum et de vérifier la meilleure méthode, la faisabilité et l'intérêt d'utiliser une enquête longitudinale de ce type pour plusieurs autres programmes de résidence.

Type d'étude Étude pilote au moyen d'enquêtes.

Contexte Cinq programmes de résidence au Canada.

Participants Le questionnaire a été proposé à 454 résidents 1 en médecine familiale.

Principaux paramètres à l'étude L'exposition antérieure des résidents à la médecine familiale, ce qu'ils pensent de la médecine familiale et ce qu'ils envisagent comme éventuel mode de pratique.

Résultats Un total de 317 résidents 1 (70 %) ont répondu au questionnaire. Même s'il n'y avait que 5 programmes de résidence qui participaient à l'étude, les répondants comprenaient des diplômés de chacune des facultés de médecine canadiennes, de même que des médecins diplômés à l'étranger. Parmi les répondants, 92 % se disaient fiers ou très fiers d'avoir choisi la médecine de famille. La plupart (73 %) indiquaient avoir eu une exposition importante ou très importante à la médecine familiale durant le cours, et pourtant, plus de 40 % avaient été très peu ou pas du tout exposés à des domaines clés de la médecine familiale comme les soins palliatifs, les soins à domicile et les soins aux groupes défavorisés. De même, les participants mentionnaient qu'ils n'avaient pas vraiment l'intention de pratiquer dans ces derniers domaines.

Conclusion Le fait d'être exposé aux domaines cliniques propres à la médecine familiale risque d'avoir une influence sur les intentions de pratique future. Des enquêtes semblables en début de résidence pourraient amener les responsables des facultés de médecine et des programmes de résidence en médecine familiale à envisager la possibilité d'inclure dans la formation des expériences d'apprentissage de cette importance.

POINTS DE REPÈRE DU RÉDACTEUR

- L'expérience vécue par les étudiants en médecine au cours du premier cycle et de la résidence a une influence sur le type de pratique qu'ils choisiront. Dans le cadre de l'évaluation du nouveau Cursus Triple C axé sur les compétences prévue par le Collège des médecins de famille du Canada, cette étude pilote voulait déterminer à quel point les nouveaux résidents avaient été exposés à la médecine familiale durant leur cours à la faculté et ce qu'ils envisageaient comme pratique future.

- Même si la plupart des résidents estimaient avoir eu une exposition importante ou très importante à la médecine familiale durant leur cours, plusieurs disaient avoir été très peu ou pas du tout exposés à certains domaines des soins cliniques qui relèvent pourtant d'une pratique complète de la médecine familiale, comme les soins palliatifs; les soins à domicile; les soins intrapartum; et les soins aux résidents des établissements de soins prolongés, des quartiers déshérités, des régions rurales et des communautés autochtones. Les résidents avaient aussi tendance à dire qu'ils n'avaient pas l'intention de pratiquer dans ces derniers domaines au en abordant leur pratique.

- Les résultats de cette enquête donnent à croire que les étudiants en médecine au Canada ont une exposition limitée à certains domaines d'activité clinique qui relèvent de la médecine familiale. Une telle observation devrait intéresser les responsables des curriculum des premier et deuxième cycles du cours de médecine si on veut s'assurer que les futurs diplômés du programme de médecine familiale soient en mesure de faire une pratique complète de cette discipline, et ce, n'importe où au Canada.

Cet article a fait l'objet d'une révision par des pairs.
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In 2010, the College of Family Physicians of Canada (CFPC), the accrediting body for family medicine residency education and the certifying body for family physicians in Canada, approved a new direction to enhance the education provided to family medicine residents. The Triple C Competency-based Curriculum (Triple C) was launched with the goal of ensuring that Canadian graduates would be competent to begin the practice of comprehensive family medicine in any community in Canada.[1] Triple C is currently being implemented by all 17 university-based family medicine residency programs in Canada.[2]

The implementation of competency-based education[3] requires an outcomes-based approach to inform curriculum design. Determining *competence,* defined as "the array of abilities across multiple domains or aspects of physician performance in a certain context,"[3] is the crux of a Triple C curriculum. Competence is multidimensional and dynamic and it changes with time, experience, and setting. For family medicine, discerning competence depends upon providing learners with learning experiences in family medicine contexts, including the types of patients, problems, settings, and populations encountered by family physicians in their day-to-day work.[4]

The CFPC has provided family medicine residency curriculum planners with 3 resources: the CanMEDS–Family Medicine (CanMEDS-FM) roles[5] as a competency framework to help guide curriculum design, the evaluation objectives for the purposes of Certification as an assessment rubric,[6] and *The Scope of Training for Family Medicine Residency* document to help describe the contexts in which learners must learn and demonstrate competence in family medicine (**Box 1**).[6,7]

The practice of comprehensive family medicine as a key outcome of Triple C is tied to the practice of family medicine across the domains of clinical care described in *The Scope of Training for Family Medicine Residency*.[7] The domains of clinical care are categorized to reflect the contexts of family medicine: care of patients across the life cycle; care across clinical settings (urban or rural); care across a spectrum of clinical responsibilities; care of underserved patients; and procedural skills. The care of underserved patients was included in order to draw attention to the responsibility family physicians often have to care for the most vulnerable. For curriculum planners, the use of these 3 resources helps to design curricula addressing the competencies and contexts required to practise comprehensive family medicine.

Despite a trend toward Canadian medical students increasingly choosing family medicine as their first choice of specialty,[8] there is also recognition that graduates are making choices related to the type of family medicine practices they wish to pursue. The 2012 National Physician Survey found that 41% of first-year family medicine residents and 35% of second-year family medicine residents indicated that they intended to narrow their scopes of practice in family medicine upon graduation.[9] One of the hopes of Triple C is to reverse this possible trend, increasing the number of family medicine graduates ready to begin the practice of comprehensive family medicine in any community in Canada.

It is recognized in the literature that there are multiple factors that influence a career choice in primary care. Among the intrinsic and extrinsic factors studied, Bland et al found that the number of required weeks in family practice, including family practice clerkships and longitudinal primary care experiences, was strongly correlated with medical students choosing primary care as their specialty.[10] Positive undergraduate rural exposure has been identified as among the top 4 factors influencing the choice to practise family medicine in rural settings.[11] With family medicine residents choosing to narrow their scopes of practice, those who design family medicine education in medical school need to consider how medical

Box 1. Scope of training for family medicine residency

Resident's should have experience in the following domains of care:

- Care of patients across the life cycle
  - —children and adolescents
  - —adults
  - —women's health care including maternity care
  - —men's health care
  - —care of the elderly
  - —End-of-life and palliative care
- Care across clinical settings (urban or rural)
  - —ambulatory or office practice
  - —hospital
  - —long-term care
  - —emergency settings
  - —care in the home
  - —other community-based settings
- Spectrum of clinical responsibilities
  - —prevention and health promotion
  - —diagnosis and management of presenting problems (acute, subacute, and chronic)
  - —chronic disease management
  - —rehabilitation
  - —supportive care
  - —palliation
- Care of underserved patients, including but not limited to
  - —aboriginal patients
  - —patients with mental illness or addiction
  - —recent immigrants
- Procedural skills
  - —as per the College of Family Physicians of Canada's list of core procedures (**www.cfpc.ca/uploadedFiles/Education/Procedure%20Skills.pdf**)[6]

Data from Tannenbaum et al.[7]

students are being exposed to family medicine and how this exposure might influence the future practices of those who undertake family medicine residency education.

The medical school accreditation standards of the Liaison Committee on Medical Education and the Committee on Accreditation of Canadian Medical Schools state that the curriculum of a medical education program must include clinical experience in primary care.[12] In Canada, unlike the United States, primary care is primarily identified as family medicine. Although experiences in family medicine are not specifically defined in this standard, the CFPC created a competency-based framework entitled *CanMEDS–Family Medicine Undergraduate* (CanMEDS-FMU)[13] describing undergraduate competencies from a family medicine perspective for undergraduate educators to use in medical schools. Like CanMEDS-FM, CanMEDS-FMU does not fully describe the spectrum of clinical activities that reflects the type of comprehensive care provided by family physicians. Although *The Scope of Training for Family Medicine Residency* document[7] is designed for residency use, it does describe the breadth of contexts in which care is provided by family physicians and is relevant to undergraduate education as well. The domains of clinical care form a guide from which learning experiences in family medicine can be built and educational assessments can be conducted. They also provide the context that gives the CanMEDS-FM and CanMEDS-FMU roles practical meaning in patient care. As the future unfolds for family medicine education in Canada, medical educators designing curricula in both undergraduate and postgraduate education have opportunities to provide better exposure to family medicine and its competencies and clinical domains using the resources offered by the CFPC.

Objective

The purpose of this study was to pilot a survey of family medicine residents entering residency in 5 Canadian residency programs, describing their previous exposure to family medicine and their perspectives related to their future intentions to practise family medicine, in order to inform curriculum planners. The pilot study was implemented initially to test the methodology, feasibility, and utility of delivering a longitudinal survey to multiple residency programs. As a result of the pilot's success, expansion of its use has been approved. This paper highlights the potential way in which planners can use results of this type of survey for designing curricula in both medical schools and residency training.

METHODS

The opportunity to take part in this pilot study was offered to all 17 family medicine programs in Canada. Five family medicine residency programs volunteered. Residents entering these programs responded to either an online or a paper survey, which consisted of multiple-choice and Likert-scale items. Data collection took place in July and August of 2012, immediately upon entry to the family medicine residency programs.

This study received ethics approval from the university ethics boards of each of the participating residency programs. An information sheet preceding the survey indicated that completion of the survey implied respondents' consent to participate in the study and to have their de-identified data entered into a secure national database held by the CFPC.

Development of the pilot survey was carried out by the Working Group for Survey Development appointed by the CFPC. The Working Group for Survey Development was created to develop and pilot 3 surveys: an entry survey, envisioned to help both the residency programs and the CFPC understand residents' perspectives upon entry to family medicine residency about their learning and their future intentions to practise; an exit survey, administered at the end of residency; and a follow-up survey, intended for family medicine residency graduates after being in practice for 3 years. Results from the 3 surveys analyzed over time will be used to inform stakeholders of the outcomes of Triple C. The first survey was designed using 5 main categories: demographic characteristics, medical education to date, perceptions related to family medicine, problem solving and learning approaches, and practice exposure to the domains of clinical care in family medicine and intentions to practise in these domains in the future. The focus of this paper is limited to demographic characteristics, medical education to date, perceptions related to family medicine, and key findings related to the exposure and intentions to practise in the domains of clinical care affiliated with family medicine.

RESULTS

A total of 454 surveys were sent to the 5 participating residency programs; there was with a 70% response rate (n = 317). Sixty-three percent (n = 199) of respondents filled out the survey in English, and the remaining surveys were completed in French. About 38% (n = 119) of returned surveys were completed online. Respondents included graduates from every medical school in Canada, as well as international medical graduates accepted into the family medicine residency programs.

Sixty-one percent (n = 193) of all respondents were female, and participants had a mean (SD) age of 28.6 (5.41) years. More than half of the respondents (58%, n = 185) were not married, and 84% (n = 266) did not have children. Most of the participants grew up in urban and suburban environments, and the remaining

25% (n = 78) came from small towns or rural areas. Almost 78% (n = 246) of all participants began their family medicine residency program within a year of receiving their medical degrees. Only 14% of the residents were trained outside of Canada.

Nearly all participants (92%) felt either positive or strongly positive about their choice to be family physicians. **Figure 1** reflects the high degree to which participants believed they had had extensive experiences within family medicine settings while in medical school, with strong family medicine role models. Overall, 73% agreed or strongly agreed that they had been exposed to comprehensive care.

Despite residents' perception that they had been exposed to comprehensive care in family medicine within medical school, when the data are compared with participants' self-reported exposure to the domains of clinical care in family medicine, there is a mismatch. Details of responses about exposure to family medicine, specific domains, and populations are shown in **Figures 1** and **2**. Because the scope of family medicine is broad, we chose to share the data related to exposure and intentions to practise for those domains of family medicine that have become less likely to be included in full-scope or comprehensive family medicine (eg, intrapartum care). The areas in which the highest proportion of new residents indicated that they had no or minimal exposure included palliative care; care in the home; intrapartum care; care in long-term care facilities; and care provided to inner-city, rural, and aboriginal populations.

Overall, 63% of respondents said they planned to practise comprehensive family medicine; however, there was a disconnect when considering the residents' responses (**Figure 3**) about their intentions to practise (or not practise) in specific domains that are part of the practice of the full scope of comprehensive family medicine, as adapted from *The Scope of Training for Family Medicine Residency* document.[7]

DISCUSSION

Survey findings like ours from incoming family medicine residents can be informative for those engaged in curriculum planning, for those introducing family medicine in medical schools, and for those teaching family medicine in residency programs.

Survey respondents were asked where they received their undergraduate medical degrees. The respondents were able to choose from a list of the 17 medical schools in Canada, or they could indicate that they received their medical degrees outside of Canada. One of the interesting demographic findings of the survey relates to the itinerant nature of Canadian medical school graduates. Although the survey was implemented in only 5 of the 17 residency programs, the cohort studied included graduates from each of the medical schools in Canada. This representative sampling suggests that the results can provide a reflection of the variation in

Figure 1. Previous exposure to family medicine

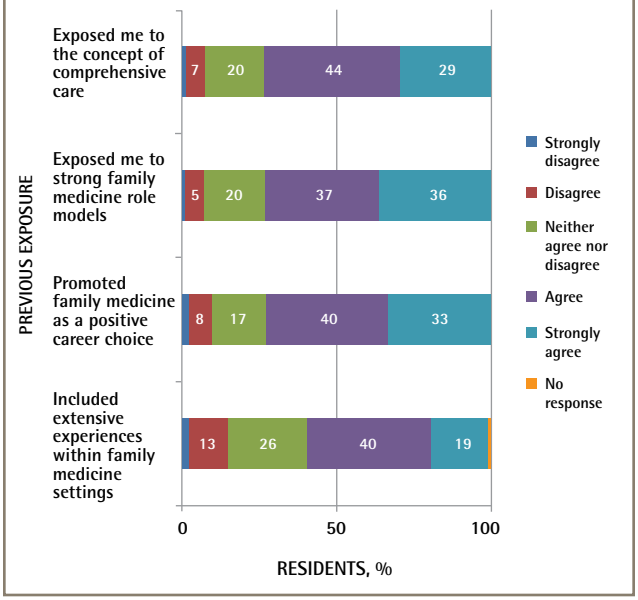


Figure 2. Previous exposure to family medicine domains

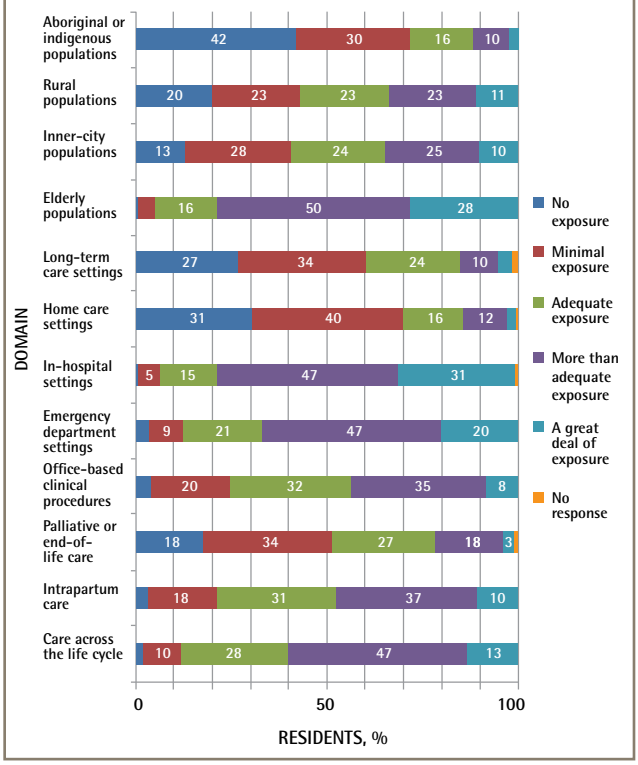
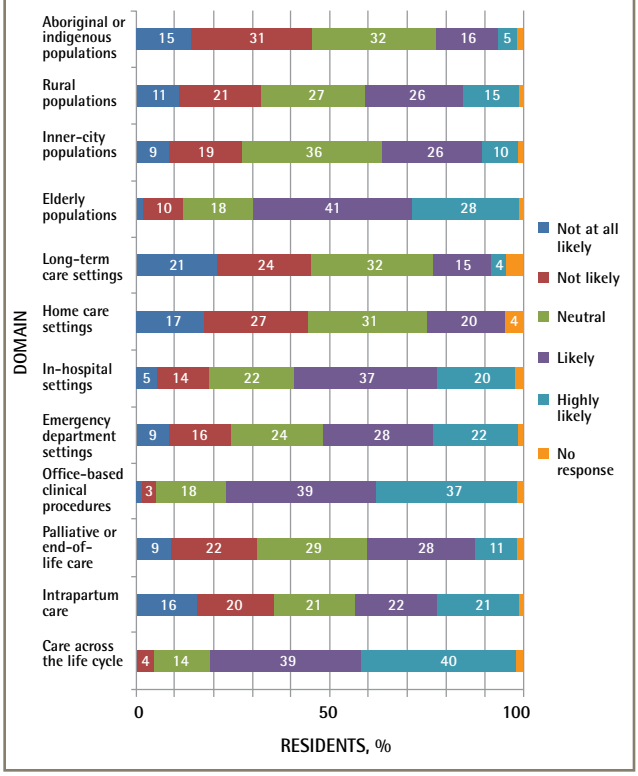


Figure 3. Intentions to practise: *Respondents indicated how likely they were to provide care or practise in the domains listed.*



exposure to family medicine and its clinical domains across Canadian medical schools.

Respondents were positive or highly positive about their choice to enter family medicine. There has been considerable work done in Canada during the past decade including introduction of family medicine interest groups for medical students in each of the universities[14]; a focus on advancing generalism in the teaching provided in medical schools, supported by the Future of Medical Education in Canada Medical Doctor project[15]; and increasing exposure to family medicine role models. Exposure to role models in family medicine has been noted to be influential in medical students choosing family medicine as a specialty.[16] Our findings reflect a strong perception of high or very high exposure to family medicine during medical school.

Although 73% of the respondents agreed or strongly agreed that they had been exposed to comprehensive care in family medicine before residency, when we compare with the domains in *The Scope of Training for Family Medicine Residency* (**Box 1**),[6,7] exposure to many of the domains of clinical care related to family medicine was lacking. Palliative care, for example, is a key domain of family medicine, yet 50% of the respondents had minimal or no exposure in medical school despite the high percentage stating that they received extensive exposure to family medicine. Despite efforts like the Educating Future Physicians for Palliative and End-of-Life Care project to advance palliative care education in medical schools in Canada,[17] a considerable dearth of experience remains. Given that the exposure to palliative care was not limited to experiences offered in family medicine but rather in medical school as a whole, this finding is disconcerting. Intrapartum care, home care, and care provided in long-term care facilities are other examples of domains of clinical care in family medicine to which respondents had minimal exposure. Those involved in planning medical school curricula need to consider whether medical students should be exposed to these domains as part of their family medicine learning experiences or as part of their learning in other disciplines.

Family physicians are often the ones who provide care to underserved patients who have limited access to care. A lack of learning experiences in medical school exposing learners to the care needed by these populations could influence their decisions to provide care to these groups in the future. Certainly, longitudinal learning experiences in underserved rural communities have been found to be a determinant factor in influencing the choice to practise in such communities.[11] We argue that exposure to what family physicians do (competencies) within the contexts that reflect the comprehensive scope of family medicine practice (domains of clinical care) should be considered in the curriculum planning of those introducing family medicine into medical school curricula. This exposure could influence learners' readiness to begin a Triple C curriculum in residency.

Our findings highlight a relationship between learners' exposure to certain domains of clinical care and their intentions to include them or not include them in their future family medicine practices. Of interest, 63% of respondents said they planned to practise comprehensive family medicine; yet, when asked specifically about the domains of clinical care associated with comprehensive family medicine, many were not planning to include some of those domains in their future practices. How then do family medicine residents define what domains of clinical care are included in comprehensive family medicine? In designing family medicine learning experiences for medical students, how do medical educators define the types of learning experiences offered to medical students to reflect the discipline of family medicine?

Limitations and future directions

Although this study included 5 residency programs across the country, it is still limited in its generalizability, as less than a third of the programs in Canada participated. In July 2014 the surveys were administered nationally across Canada in 16 of the 17 family medicine residency programs, and this will continue for a minimum 5-year period. The rich pool of data that this opportunity will

provide will not only capture changes over time, but will also be applicable on a national scale. This pilot study has helped to inform the process of implementation. Cognizant of the strengths of mixed-methods studies, we are working to develop a qualitative component to gain deeper understanding of the perspectives of learners and clinical teachers about their experiences with Triple C.

Conclusion

This study raises questions about how medical students are exposed to family medicine and whether medical educators design curricula with both the competencies and contexts of family medicine in mind to reflect its comprehensive nature. Although Canada has benefited from an increased interest in family medicine as a specialty, how family medicine is practised in the future could be influenced by how learners are exposed to the scope of family medicine in medical school and residency education. More research is needed to explore the relationship between exposure and intention to practise. Results from this type of survey uncover that learners might have limited exposure to the domains of clinical care affiliated with the discipline of family medicine in medical schools across Canada. With the use of clinical domains to describe the contexts within which the CanMEDS-FM and CanMEDS-FMU competency frameworks can be taught and assessed, family medicine educators involved in both undergraduate and postgraduate education have a common language for designing curricula connecting 2 parts of the learning continuum, with the aim of graduating family physicians ready to begin the practice of comprehensive family medicine.

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Contributors

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Competing interests

None declared

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