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Scope and activities of Māori health provider nurses: an audit of nurse–client encounters

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ABSTRACT

Introduction. The activities and consultations undertaken by Māori health provider nurses are likely broad and operate within a Māori nursing model of care. However, there is little quantitative evidence to document and describe these encounters with clients. The Omaha coding system provides a mechanism in which to quantify nursing encounters through classifying client problems by domain, interventions and specific targets relating to interventions. **Aim.** The aim of this study was to document the types of encounters and interventions undertaken by Māori health provider nurses. **Methods.** An audit was undertaken of patient encounters occurring within a Māori health provider between 1 January 2020 and 31 December 2020. Encounters were randomly selected and problems, activities and interventions coded utilising the Omaha coding system. Simple descriptive statistics were used. **Results.** A total of 5897 nurse–client encounters occurred over the study period. Overall, 61% of the audited nurse–client encounters related to the physiological domain and only 6% of encounters were related to the psychosocial domain. And 29% of nursing interventions involved teaching/guiding/counselling and a further 29% of interventions were case management. **Discussion.** The wide variety of conditions seen and the number of interventions carried out indicate the broad scope of Māori health provider nurses. However, there were likely undocumented problems, which could reflect the medicalisation of the electronic health record. Redesigning electronic health records to apply more of a nursing and Māori health provider lens may facilitate more inclusive ways of documentation.

Keywords: Audit, Consultations, Electronic health records, Māor health, Māori health providers, Nursing, Omaha system, Primary care.

Introduction

Primary care nursing activities and consultations are well described in the literature;[1–4] however, there is less quantitative evidence of the forms of consultations undertaken in primary care settings in New Zealand, and similarly little literature on nursing consultations within Māori health providers. Pipi *et al.*[5] defined Māori health providers as Māori organisations that provide health services to Māori communities, are governed by and have clear accountabilities to tribal or other Māori groupings and operate within Māori frameworks. The activities carried out by Māori health providers are broad and the nursing model of the consultations generally includes development of relationships through connecting to place and person and shared relationships (whakawhanaungatanga), seeing the person in context of their family (whānau) and seeing the person in the context of social and spiritual aspects of their life, as well as a focus on social determinants of health.[5,6]

One of the difficulties in quantifying the types of consultations and resultant activities undertaken by nurses in primary care, and by extension Māori health providers, is the difficulty in easily querying the client record. Partially, this relates to a lack of consistent coding of primary care consultations, a lack of automated processes for coding consultations and a lack of suitable coding systems for primary care.[7] A number of structured

WHAT GAP THIS FILLS

What is already known: Very little is documented of the problems seen and activities undertaken by general practice nurses. Even less is documented of the problems seen and activities undertaken by Māori health provider nurses.

What this study adds: Evidence of the broad range of the scope of practice and activities undertaken by Māori health provider nurses.

coding systems designed for nurses have been developed to overcome the barrier of a lack of nurse-focused coding.[8] One such system is the Omaha system, which is an inclusive and comprehensive coding structure designed to systematise nursing activity.[9] Each of the codes in the Omaha system is included within the Systemized Nomenclature of Medicine (SNOMED) nomenclature. Client problems can be classified according to domain (physiological, psychosocial, environmental, health-related behaviour), and further divided according to presentation details. Interventions performed by nurses can be classed as teaching and guidance; treatment and procedure; surveillance; or clinical management, with targets relating to the specific activity undertaken.[9]

The Omaha system has been used in a number of primary care nursing studies[10] to document changes in behavioural health consultations,[11] to look at the value of interventions aimed at vulnerable populations,[12] to explore the range of conditions and types of nursing interventions within an Indigenous setting, to document chronic care management,[12,13] and in mapping community nursing services within a New Zealand context.[8,14] Monsen *et al.*[8] suggested that the Omaha system was well suited to use within New Zealand nursing fields as it allowed documentation of a holistic perspective that acknowledged culture and spirituality. Although the Omaha system has not been used in studies involving Māori health providers, its use in other Indigenous settings and its ability to capture holistic elements of a consultation make it potentially useful for analysing the context of consultations and interventions carried out by nurses working for Māori health providers. In this study, we report on the types of encounters and interventions undertaken by nurses employed by a Māori health provider by using the Omaha system to classify consultations.

Methods

The setting of this study is a Māori health provider based in Northland, New Zealand. At the time of the study, the primary care team consisted of five nurses, a nurse practitioner, a medical officer and visiting nursing and medical students. The primary care team delivered services to five rural outreach clinics, that were up to 1 h from the urban base clinic. About 40% of the workload for the nurses was in rural clinics and the remainder in the urban base clinic. About half of the clinics were nurse-led; that is, no medical practitioner was physically present. Nurses utilised standing orders to treat a range of conditions. Standing orders, in the New Zealand context, allows nurses to dispense medication, under the authority of a prescribing doctor or nurse practitioner, and following specific guidelines relating to the use of the medication. In addition, the nurses were able to vaccinate, order investigations and refer patients independently. The wider team of the Māori health provider included community support workers, specialist nurses, and health navigators.

The authors, at the time of this study, were members of the primary care team and as such, they were able to access the clinical records and undertake the audit. The first author is a male medical practitioner of New Zealand European descent, the second author is a female, Māori medical practitioner, the third author is a female nurse of New Zealand European descent and the fourth author is a Māori female nurse. The study procedures involved identifying all nurse–client encounters in 2020 through the creation of a query of the electronic health record. A total of 5897 nurse–client encounters in 2020 (excluding nurse practitioner–client encounters and specialist nurse–client encounters) were identified. The National Hospital Index numbers of these encounters, along with the date of the encounters and demographic details of the clients were extracted and the random number generator function in Microsoft Excel for Mac (Microsoft Corporation, v16.52) was utilised to select 500 encounters. Encounters were only included in the audit if the client was seen face-to-face or had a telephone consultation with a nurse (see Fig. 1). Encounters that involved just telephone calls relating to appointment reminders or booking calls or failed contact attempts were excluded. A total of 330 nurse–client encounters were included in the audit.

Each of the encounters was identified in the electronic health record and then read through by the second author. The second author then utilised the Omaha system to code the problems clients presented with and the interventions that the nurses performed. These codes were recorded on an Excel spreadsheet. The first author coded a proportion of the encounters at the beginning of the study to ensure that there was consistency and agreement between authors. The first author was blinded to the second author's coding during this double-coding process. When it was determined that there was consistent coding between authors, the second author coded the remainder of the encounters. Reliability of the researcher coding was increased through a feedback loop where the emerging coding structure was discussed with the third and fourth authors and the rest of the nursing team. This gave a deeper understanding of the activities they undertook and any issues that they had in relation to documenting encounters in the electronic health record. In addition, there were a number of presentations to the

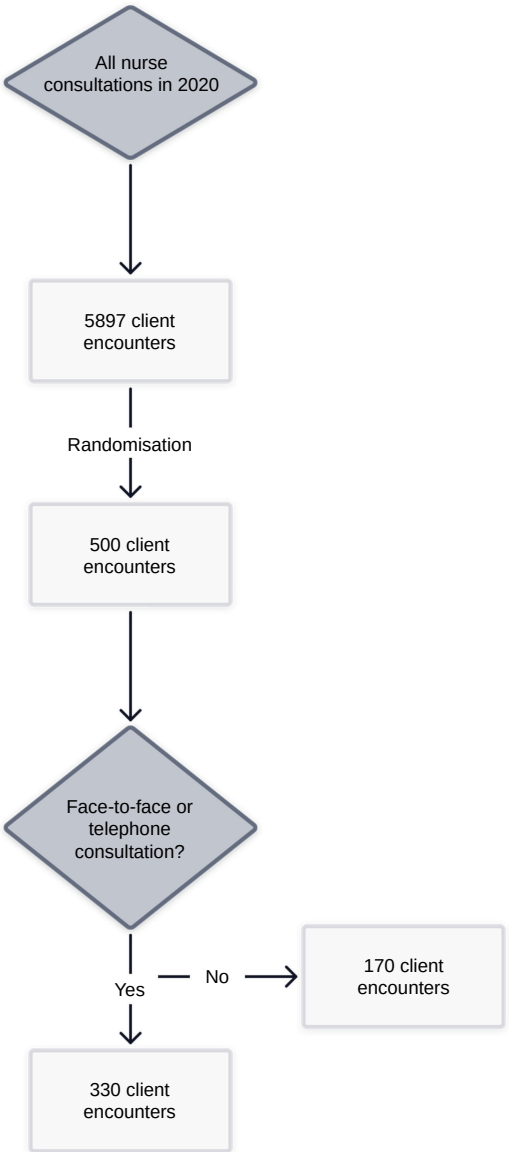

Fig. 1. Data extraction flowchart.

nursing team on the evolving coding outcomes and further feedback was gained.

Ethics approval was not required under the New Zealand Health and Disability Ethics Committee guidelines, as this was deemed a low-risk observational study and the audit was carried out by members of the primary care team of the Māori health provider.

Results

The 330 encounters related to 276 individual clients. The demographic details of the clients are outlined in Table 1 (numbers may not add to 276 due to missing data). The majority of clients were female and Māori, with a skew towards older adults. Three-quarters of clients were in quintiles four and five, representing the lowest levels of socioeconomic deprivation. Over 85% of clients had just one encounter included in the audit and <4% of clients had three or more encounters included.

Table 1. Demographic details of clients.

Demographic detail	Number	%
Gender		
Male	95	35.6
Female	172	64.4
Age (years)		
0–9	15	5.4
10–19	19	6.9
20–29	30	10.9
30–39	36	13.0
40–49	52	18.8
50–59	51	18.5
60–69	34	12.3
70+	39	14.1
Ethnicity		
Māori	181	68.6
European	69	26.1
Pacific Peoples	6	2.3
Asian	5	1.9
Other	3	0.8
Quintile		
1	5	2.0
2	24	9.7
3	37	14.9
4	45	18.2
5	137	55.2
Number of encounters		
1	237	85.9
2	28	10.1
3	8	2.9
4	2	0.7
5	1	0.4

A total of 554 presenting issues were seen for the 330 encounters. The number of issues per encounter are presented in Table 2.

Of the 554 issues coded, 340 (61%) related to the physiological domain, 148 (27%) were in the health-related behaviours domain, 33 (6%) in the environmental domain and 33 (6%) were in the psychosocial domain. These issues are further classified into specific problems, as shown in Table 3.

Table 2. Number of issues.

Number of issues	Number of encounters	%
1	203	61.5
2	74	22.4
3	29	8.8
4	10	3.0
5	8	2.4
6	6	1.8

There were 1103 interventions that related to the 554 issues identified, with a mean of 3.3 interventions per encounter and two interventions per issue. The maximum number of interventions for an issue was eight. No intervention was documented in 67 of the issues; 320 of the interventions were classified as teaching/guiding/counselling; 316 interventions were classified as case management; 280 interventions as surveillance; and 187 classified as treatment/procedure. These interventions were broken down by target areas and the most common targets were signs/symptoms – physical 141, specimen collection 134, continuity of care 111, medication administration 94, medication action/side-effects 82, medication co-ordination/ordering 61, screening procedures 60.

Discussion

This audit, of the activity of nurses working for a Māori health provider, demonstrates that the nurses documented a wide range of problems and that the most common problems seen related to physiological issues. This finding is consistent with other studies demonstrating that primary care nurses see a wide range of conditions and undertake a broad range of activities.[2] Some differences between this study and others show that in this study, the most predominate conditions seen were infectious diseases, whereas in other studies, skin conditions predominate and that the most common activity undertaken was teaching/guiding/counselling.[2] The category 'communicable/infectious diseases' in this study captured clients presenting for influenza vaccinations. This finding is consistent with other studies demonstrating that immunisations are the most common nursing activity.[3] Another explanation for the high proportion of communicable/infectious diseases seen lies in the nature of the more independent work carried out by nurses working for Māori health providers and their diagnostic skills. In this study, the nurses undertook nurse-only clinics and utilised standing orders to dispense medication.[15] A number of these standing orders related to antibiotic use for common acute conditions. The use of standing orders requires a nurse to utilise diagnostic reasoning.[16] Evidence suggests that nurses using standing orders extend their scope of practice and that standing orders are a useful tool in providing better access to medication for clients.[17]

Table 3. Types of problems.

Domain	Problem	Number	%
Physiological	Communicable/infectious disease	128	23.1
	Circulation	66	11.9
	Pain	51	9.2
	Respiratory	27	4.9
	Reproductive function	19	3.4
	Skin	17	3.1
	Urinary function	9	1.6
	Neuromusculoskeletal	5	0.9
	Pregnancy	4	0.7
	Digestion/hydration	3	0.5
	Vision	3	0.5
	Hearing	3	0.5
	Bowel function	2	0.4
	Cognition	2	0.4
Health-related behaviour	Medication regimen	49	8.9
	Health-care supervision	33	6.0
	Nutrition	31	5.6
	Substance use	19	3.4
	Family planning	8	1.4
	Sleep and rest patterns	7	1.3
	Personal care	3	0.5
	Physical activity	1	0.2
Environmental	Income	26	4.7
	Neighbourhood/workplace safety	3	0.5
	Residence	1	0.2
	Sanitation	1	0.2
Psychosocial	Mental health	16	2.9
	Communication with community resources	8	1.4
	Abuse	5	0.9
	Caretaking/parenting	2	0.4
	Social contact	1	0.2
	Grief	1	0.2
Total		553	100.0

There are differences in the demographic proportions of the clients seen in this study, with a small percentage of children compared to expected Northland demographics. This reflects the funding model of the provider as its contracts are to provide outreach services for clients who have access issues to general practice.[15] The major access issue to

general practice in New Zealand is cost, and there is no cost for children aged <14 years, meaning that this age group are more likely to be registered and access a general practice and less likely to need services by a Māori health provider.

There were problems that were not documented in the medical record by the nurses, which they felt that they did see, and these included mental health issues and cultural issues. Other undocumented problems, commented on by the nurses in discussions, related to role change, interpersonal relationships, spirituality, sexuality, neglect, growth and development, oral health and postpartum problems. The undocumented problems mostly fall within the psychosocial domain, which has shown to have low documentation in other primary care record studies.[2,18,19] Non-documentation of problems can reflect the medicalisation of the electronic health record and the lack of a nursing lens. One reflection, which the nurses in this study had, was that they felt cautious in documenting items such as spirituality or whakapapa (Māori geneology) when they knew that the notes would be viewed by a doctor from outside the organisation, and that feedback that the nurses had received from external doctors was that they only wanted to receive 'short, sharp notes that related to medical problems'. Another possible reason for non-documentation is the perpetuation of invisibility of nursing activities. Pearson[20] suggested that a lot of nursing work is invisible due to the oral traditions of nursing, and proposed that health documentation should be sensitive to the complexities of nursing care. The electronic health record used by this provider presents notes in a subjective note field and an objective note field. Although this format lends itself to a subjective/objective/assessment/plan (SOAP) format, one critique of this approach is that it can shift the focus from the client to the disease, thereby fostering a disease-focused model of care.[21]

The non-documentation of cultural aspects of the client, due to the concerns that the nurses had regarding external critique of their notes, reflects how colonisation impacts on indigenous nursing care. Although indigenous nursing care, like the care provided by this provider, operates within an indigenous framework, there are ongoing external Western norms and discourses that indigenous nurses must battle against for their care to be perceived as valid. A discourse reported in the literature relates to non-Māori criticisms of Māori nurses. For example, Kidd *et al.*[22] reported how non-Māori nurses would ask 'What are Māori nurses even doing?' (p. 390), and Hunter and Cook[23] refers to how Māori nurses need to consistently justify culturally appropriate nursing care. Similarly, McCreanor and Nairn[24] highlighted how non-Māori doctors were ambivalent about Māori health initiatives and were suspicious of cultural dualism. These white normative pressures may influence documentation within indigenous health providers. The Western emphasis on written evidence runs counter to oral traditions within a Māori world view, and suggest that quantitative studies, such as this, are not suited for capturing evidence on cultural practices. Kaupapa Māori qualitative studies, as well as feedback from the nurses in this study, have shown specific Māori nursing practices operate within Māori health providers, giving further strength to the argument that electronic health records need to be redesigned to suit nursing models of care and, in particular, Māori nursing models.[25,26]

Although there is qualitative literature describing the activities undertaken by nurses within Māori health providers, there is little quantitative literature. In this study, Māori health provider nurses undertook a wide range of activities. The range of activities undertaken is consistent with other studies of nursing activities.[3] In this study, approximately 30% of that activity was teaching/guiding/counselling and a similar percentage was case management. This heavy emphasis on case management contrasts to non-indigenous primary care nursing, where there is typically a lower proportion of case management activity. For example, in a US Community Health Centre, only 15% of a nurse's time was spent in case management activity.[1] Likewise, this study contrasts with New Zealand research that shows little primary health-care involvement in clients with complex social and health issues.[27] Western literature has coined various terminologies, such as nurse navigator, care coordinator or case manager, to describe primary care nursing roles that are heavily weighted towards case management.[28] However, these terms suggest a Western invention of a new concept. Māori nursing has had a long history of case management expressed through innovations such as the Māori nursing scheme, implemented in the early 1900s, and the development of Māori nursing models at the turn of the 21st century.[26,29] Studies, such as this one, show that case management is embedded as a normal and significant amount of the activities of nurses working for Māori health providers. This should be taken into account with any changes to the workforce and funding model as a result of the New Zealand health reforms.

Although the Omaha system provided a useful coding matrix for documenting problems and interventions, there are potential issues in implementing such a system for routine documentation of each encounter. One difficulty is that significant training would be required for nurses in order to understand the coding system, and that changes to the electronic health record would be required to allow easy selection of relevant codes. Although documenting the activities in all nursing encounters is useful for funding purposes, there is an argument that in a 'by Māori-for-Māori' health system, allocation of funds should occur based on needs of populations. Requiring counting of activities for contractural and reporting purposes reflects Western ways of thinking.[30]

The strengths of the study are that it provides insight into an under-researched area and that the study takes a non-deficit approach. A weakness of the study is that the study design limited the collection of qualitative data, which would have added richness and deeper understanding.

However, the inclusion of the feedback loop involving the nursing team aided in analysis.

Conclusion

This study is one of the only studies that quantitatively describes the nursing activities undertaken within a Māori health provider. The wide variety of conditions seen and the number of interventions carried out indicate the broad scope of nurses working for Māori health providers. This scope may be broader than that for nurses working in general practice settings. The use of standing orders may assist nurses, working for Māori health providers, to further broaden their scope. However, there is evidence that the methods of recording nurse consultations are heavily influenced by Western norms and medical frameworks. These normative practices may restrict Māori nursing practice. Efforts to redesign the electronic health record, to facilitate more culturally appropriate and inclusive ways of documentation, are important.

References

1 Anderson DR, St Hilaire D, Flinter M. Primary care nursing role and care coordination: an observational study of nursing work in a community health center. *Online J Issues Nurs* 2012; 17(2): Manuscript 3. doi:10.3912/OJIN.Vol17No02Man03
2 Joyce CM, Piterman L. The work of nurses in Australian general practice: a national survey. *Int J Nurs Stud* 2011; 48(1): 70–80. doi:10.1016/j.ijnurstu.2010.05.018
3 Norful A, Martsolf G, de Jacq K, *et al.* Utilization of registered nurses in primary care teams: a systematic review. *Int J Nurs Stud* 2017; 74: 15–23. doi:10.1016/j.ijnurstu.2017.05.013
4 Halcomb E, Salamonson Y, Davidson P, *et al.* The evolution of nursing in Australian general practice: a comparative analysis of workforce surveys ten years on. *BMC Fam Pract* 2014; 15: 52. doi:10.1186/1471-2296-15-52
5 Pipi K, Cram F, Hawke R, *et al.* A research ethic for studying Maori and iwi provider success. *Soc Policy J N Z* 2004; 23: 141–54.
6 Crengle S. The development of Māori primary care services. *Pac Health Dialog* 2000; 7(1): 48–53.
7 de Lusignan S. The barriers to clinical coding in general practice: a literature review. *Med Inform Internet Med* 2005; 30(2): 89–97. doi:10.1080/14639230500298651
8 Monsen K, Honey M, Wilson S. Meaningful use of a standardized terminology to support the electronic health record in New Zealand. *Appl Clin Inform* 2010; 1(4): 368–76. doi:10.4338/ACI-2010-06-CR-0035
9 Martin KS. The Omaha system: a key to practice, documentation, and information management. St. Louis, MO: Elsevier; 2005.
10 Topaz M, Golfenshtein N, Bowles K. The Omaha System: a systematic review of the recent literature. *J Am Med Inform Assoc* 2014; 21(1): 163–70. doi:10.1136/amiajnl-2012-001491
11 Holt J, Brooke K, Pryor N, *et al.* Using the Omaha system to evaluate the integration of behavioral health services into nurse-led primary health care. *J Community Health Nurs* 2020; 37(1): 35–46. doi:10.1080/07370016.2020.1693115
12 Thompson C, Monsen K, Wanamaker K, *et al.* Using the Omaha System as a framework to demonstrate the value of nurse managed wellness center services for vulnerable populations. *J Community Health Nurs* 2012; 29(1): 1–11. doi:10.1080/07370016.2012.645721
13 Plowfield L, Hayes E, Hall-Long B. Using the Omaha System to document the wellness needs of the elderly. *Nurs Clin North Am* 2005; 40(4): 817–29, xiii. doi:10.1016/j.cnur.2005.08.010
14 Neff D, Kinion E, Cardina C. Nurse managed center: access to primary health care for urban Native Americans. *J Community Health Nurs* 2007; 24(1): 19–30. doi:10.1080/07370010709336583
15 Eggleton K. Measuring the quality of Māori health providers: a critique of Tauiwi paradigms. PhD Thesis, University of Auckland, Auckland, New Zealand; 2020.
16 Wilkinson J. Nurses' reported use of standing orders in primary health care settings. *J Prim Health Care* 2015; 7(1): 34–41.
17 Taylor R, McKinlay E, Morris C. Standing order use in general practice: the views of medicine, nursing and pharmacy stakeholder organisations. *J Prim Health Care* 2017; 9(1): 47–55. doi:10.1071/HC16023
18 Luna D, Quirós FGB, de, Garfi L, *et al.* Reliability of secondary central coding of medical problems in primary care by non medical coders, using the International Classification of Primary Care (ICPC). *Medinfo* 2001; 10(Pt 2): 300.
19 Santo E, Vo M, Uratsu C, *et al.* Patient-defined visit priorities in primary care: psychosocial versus medically-related concerns. *J Am Board Fam Med* 2019; 32(4): 513–20. doi:10.3122/jabfm.2019.04.180380
20 Pearson A. The role of documentation in making nursing work visible. *Int J Nurs Pract* 2003; 9(5): 271. doi:10.1046/j.1440-172X.2003.00442.x
21 Blair W, Smith B. Nursing documentation: frameworks and barriers. *Contemp Nurse* 2012; 41(2): 160–8. doi:10.5172/conu.2012.41.2.160
22 Kidd J, Came H, Herbert S, *et al.* Māori and Tauiwi nurses' perspectives of anti-racism praxis: findings from a qualitative pilot study. *AlterNative* 2020; 16(4): 387–94. doi:10.1177/1177180120974673
23 Hunter K, Cook C. Cultural and clinical practice realities of Māori nurses in Aotearoa New Zealand: the emotional labour of indigenous nurses. *Nur Praxis Aotearoa N Z* 2020; 36(3): 7–23. doi:10.36951/27034542.2020.011
24 McCreanor T, Nairn R. Tauiwi general practitioners talk about Maori health: interpretative repertoires. *N Z Med J* 2002; 115(1167): U272.
25 Simon V. Characterising Māori nursing practice. *Contemp Nurse* 2006; 22(2): 203–13. doi:10.5172/conu.2006.22.2.203
26 Maloney-Moni J, North N. Innovations in service delivery to improve Maori health outcomes: a mobile disease state management nursing service. *Pac Health Dialog* 2003; 10(2): 171–7.
27 Sheridan NF, Kenealy TW, Kidd JD, *et al.* Patients' engagement in primary care: powerlessness and compounding jeopardy. A qualitative study. *Health Expect* 2015; 18(1): 32–43. doi:10.1111/hex.12006
28 McMurray A, Cooper H. The nurse navigator: an evolving model of care. *Collegian* 2017; 24(2): 205–12. doi:10.1016/j.colegn.2016.01.002
29 Dow D. Maori health & government policy 1840-1940. Wellington: Victoria University Press; 1999.
30 Eggleton K, Anderson A, Harwood M. The whitewashing of contracts: Unpacking the discourse within Māori health provider contracts in Aotearoa/New Zealand. *Health Soc Care Community* 2021; 1–8. doi:10.1111/hsc.13691

Data availability. The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

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