

The inequity of access to health: a case study of patients with gout in one general practice

Leanne Te Karu, Matire Harwood, Bruce Arroll, Linda Bryant, Tim Kenealy

ABSTRACT

AIM: Gout is a health equity issue for Māori and Pacific peoples because disparities in quality of care exist. This study aims to describe domains of access that may contribute to the optimisation of gout care and, therefore, address health inequity.

METHODS: The practice management system at one general practice in Auckland was used to identify enrolled patients with gout, using disease codes and medication lists. Barriers to access for the cohort were investigated using staff knowledge and the practice management system. The general practice is uniquely situated within an urban marae (traditional meeting house) complex serving a predominantly Māori community. This enables a focus on domains of access other than cultural safety.

RESULTS: Of 3,095 people enrolled at the practice, 268 were identified as having gout. Of these, 94% had at least one other long-term health condition. The majority of people with gout enrolled at the practice have employment roles incongruent with the clinic's opening hours.

CONCLUSIONS: Social circumstances, such as employment and availability of transport, should be actively discussed with all patients and recorded in the practice management system. Reorientation of health services, including hours of access, is evidentially required to ensure optimal management of gout and possibly other health conditions.

Achieving health equity in Aotearoa New Zealand is a stated aim of the Government and those responsible for managing and developing its health and disability system.¹ This is against a background of a long history of inequitable health outcomes and life expectancy for Indigenous Māori compared to non-Māori.^{2,3} A recent review of New Zealand's health and disability system sought to identify barriers within the system, with a "goal of achieving equity of outcomes and contributing to wellness for all, particularly Māori and Pacific peoples."⁴ Additionally, the Waitangi Tribunal (the Tribunal) is currently hearing national claims relating to health services and health outcomes for Māori.⁵ The Tribunal is alarmed that pro-equity action is still not embedded within the system, despite the Crown stating 14 years ago that Māori health inequities were unacceptable.⁶

Gout has been described in Māori since the thirteenth century,⁷ and although its prevalence has increased for over 50 years,⁸⁻¹⁰ it is significantly less likely to be optimally managed to prevent painful attacks and long-term sequelae than in non-Māori.¹¹ A large body of evidence confirms that uncontrolled serum urate levels, together with gout flares, lead to unnecessary joint and organ damage and premature mortality.¹²⁻¹⁶ This is despite that gout can be diagnosed with certainty, and inexpensive pharmacotherapy to lower serum urate and prevent gout is readily available.¹⁷ Inequity in gout prevention also exists for Pasifika peoples.¹¹ Given non-Māori, non-Pasifika peoples enjoy better health outcomes and longer life expectancy than Māori and Pasifika peoples, the gap in the quality of healthcare for gout is disturbing and in line with longstanding observations such as the "inverse care law."¹⁸ Gold standard treatment of gout in

New Zealand has the potential not only to eradicate the disease but to contribute to a substantial reduction in this nation's health inequity.

Penchansky and Thomas¹⁹ and others²⁰ define “access” as a general concept that summarises a set of more specific domains, which encompass approachability, acceptability (which includes cultural safety), availability and accommodation (which includes service opening hours), affordability and appropriateness (which provides for quality of care). New Zealand's Pharmaceutical Management Agency (PHARMAC) has provided another layer to the taxonomy of access to health by including the availability of medicines or those subsidised so that people pay a minimum fee (NZ\$5 per medication at the time of this study).²¹

The complexity and multifaceted nature of access to health services for Indigenous peoples has been further described.^{22,23} Davy et al advocated that previous models needed to be less linear and more inclusive of the healthcare system to understand and address access for Indigenous people. They stressed the importance of access to culturally safe healthcare services to meet the needs of communities.²³

This paper aims to describe domains of access to gout services at one specific general practice in New Zealand. This practice is Māori-led and oriented to its community (79% Māori), with formal links to the marae (traditional meeting house) and its social services, including housing, food banks and Kaumātua (elder) support. There is ethnic congruence between clinic staff and the community. These factors explicitly address cultural safety (acceptability) to the community and allow for considering other health system factors that may impact other domains of access for Māori and Pasifika patients.

Methods

The study site is a general practice situated in a marae complex. It is a “very low-cost access” practice, meaning that fees to patients are relatively low (maximum NZ\$18 per adult consultation at the time of this study). Some clinic staff speak te reo Māori and Samoan languages. Transport is available to help people attend appointments. Community health workers are

integrated into the practice and run programmes co-created with the community to address long-term health conditions, including diabetes and cardiovascular disease, with routine conversations around gout.

The practice's enrolled gout population was determined on 1 June 2017 from the electronic medical records in the practice management system (PMS). Descriptive statistics are reported in this paper. The PMS only records data collected at the practice. For health services provided outside the practice, data are dependent on the outside service returning a record to the practice in which the patient is enrolled. As per previous definitions,^{24,25} people were classified as having gout if the PMS recorded a classification of gout or a prescription for allopurinol or colchicine. People who had been prescribed allopurinol and had a diagnosis of myeloproliferative disease were excluded. Author LTK reviewed the PMS records of each person with gout for evidence of employment status, health status and difficulties with access. This review was supplemented by a discussion of patients with practice staff.

Ethnicity was classified according to that recorded in the PMS, and if more than one ethnicity was recorded, priority was assigned to Māori followed by Pacific.

Ethics approval was not sought for this study as it was based on routinely collected records. All enquires were undertaken by staff with clinical responsibilities to care for these patients, and all results are anonymised.

Results

Of 3,095 people (all ages) registered at the site practice, 268 people were identified as having gout (Table 1).

Māori made up 72% of the gout cohort and 79% of the practice population; Pasifika peoples made up 20% and 12%, respectively; 69% were male across all ethnicities. Non-Māori, non-Pasifika males tended to be older, although numbers were small. Mean age was lowest for Pasifika peoples.

Nearly every person with gout (94%) had one or more long-term conditions in addition to their gout; only 15 people had gout alone. The four most common comor-

bidities are listed in Table 2. The average number of long-term medicines per person prescribed to this cohort was 4.5 (range 0–16). Thirteen people had been prescribed ten or more medicines concurrently, and 128 had five or more. Polypharmacy is commonly defined as five or more medications.²⁶

Employment status

In total, 144 people (55%) worked in labouring/manual jobs. This included 40 people working in construction (concrete, roofing, roading), 38 people driving machinery (cranes, buses, trucks, stock trucks, refrigerator trucks) and 37 people working in factories or as shift workers. A further 29 were listed as “labourer” without detail.

Of the remaining 124 people, 41 people were receiving invalid benefits for an array of health conditions; some had significant levels of disability, including being wheelchair users. Retired people, homemakers or solo parents numbered 49. Nine people had educative roles (teacher aides, te reo (Māori language) teachers, youth workers). For 25, either the information was insuffi-

cient or they were homeless people who did not request medical certificates for invalid benefits.

Individual lookup within the PMS also revealed specific commentary for 18 people (Table 3) detailing how employment affected their ability to access health services.

Discussion

PMS records of diagnostic codes, clinician notes and staff knowledge provided background on a cohort of people with gout enrolled in a predominantly Māori general practice in South Auckland, New Zealand. More than half of patients (55%) had limited or no ability to access the general practice during clinic opening hours, and the practice has little flexibility to respond to these barriers, which constitutes a shortfall in the access domain of availability and accommodation. We believe the nature and extent of this issue has received insufficient attention and is therefore not fully appreciated.

The concept of barriers to accessing the New Zealand health system is not new. For example, costs can be an issue for the patients, even though the fees can be low

Table 1: Ethnicity, gender, age of enrolled patients with gout (N=268).

	Gender N	Age, years Mean (range)	% of 268 patients with gout
Māori			
Female	61	60 (23–83)	72
Male	131	53 (23–84)	
Pasifika peoples			
Female	21	57 (40–89)	20
Male	33	47 (23–81)	
NZ European			
Female	2	59 (47–70)	6
Male	14	63 (45–79)	
Other*			
Female	0		2
Male	6	54 (39–71)	
Total			
Female	84 (31%)	58 (23–89)	100
Male	184 (69%)	54 (23–84)	

*Other included Asian (n=2), Indian (n=2), South African (n=1) and American (n=1). NZ = New Zealand.

Table 2: The four most common comorbidities .

Comorbidity	Patients (n)
Cardiovascular disease*	194
Type 2 diabetes mellitus	92
Pre-diabetes	19
Asthma	27

*Cardiovascular disease included hypertension, familial hyperlipidaemia, ischaemic heart disease, congestive heart failure, atrial fibrillation or chronic kidney disease in the absence of diabetes.

Table 3: Examples of notes recording access issues within the clinical record.

- Works on cranes at wharf; struggles to get in
- Works on road construction; usually gone 13 hours/day
- Works in a dry-cleaning factory; 13-hour days; struggles to get in
- Labourer; works long hours and shifts; has eight kids, and 11 moko live with him and wife; always stretched
- Plastic laminator sometimes both night shifts and day shifts
- Labourer; on road construction, now struggles to get employment; was in jail in 20s for drink driving; job security an issue
- Works days in fish processing and on the trains at nights; diabetic; HbA1c 98 mmol/mol
- Plasterer; out on construction sites
- Linesman; works out of town
- Roofer; just changed to cleaner because of multiple OA (osteoarthritis) issues; can't finish work until after 5 pm
- Truck driver; can be out of town for weeks
- Caretaker cleaner; struggles to get in
- Machine operator; can't get in
- Gout at 30 years; now gets every 2/52; roofer; can't be off work
- Works until 7 pm each day; hard to get in; mother rings in for scripts
- Labourer; gets gout flares 3x/year; difficult to get in
- Labourer; works in the city; starts at 5 am
- Truck driver; hard to get in

for New Zealand. The 2016/17 New Zealand Health Survey reported affordability as a domain with “unmet need due to general practitioner costs” in 22% of adult Māori respondents compared with 18% for Pacific, 10% for Asian and 14% for European/other.²⁷ Equally, racism—a failure in the domain of acceptability—has been shown to impact on access to general practice and contribute to unmet need.²⁸

In addition to this, the people who experienced challenges accessing services had comorbidities that should elevate care and prioritise them for health services. Although the co-prevalence of other health conditions alongside gout is not new, the extent is not yet fully understood. Winnard et al found that diabetes and/or ischaemic heart disease affected 40% of people with gout.²⁹ They further identified that a person with diabetes and gout had an age-standardised mortality rate ratio of 2.0 compared with a person with diabetes without gout ($p < 0.001$). Likewise, a person with cardiovascular disease (CVD) and gout had an age-standardised mortality rate ratio of 1.4 compared with a person with CVD who did not have gout. This reinforces the double impact, and the implications of even worse access, for those who are most needing treatment. Our study found a co-prevalence of 72% with CVD and 94% with any long-term health condition.

These barriers to accessibility were further compounded for people with a disability. The assumption that standard clinical health service hours are sufficient to meet the needs of those who most require support must be challenged. We were not able to determine the numbers of people in this cohort who were unable to “pop-in” to see their doctor or healthcare professional. This study indicates that accessibility issues may be wider than envisaged.

Collecting and storing data on social determinants and barriers to access in electronic medical records is gaining momentum internationally,^{30,31} but it is not seen routinely in New Zealand. Therefore, we propose that employment status should be recorded within the PMS, and enablers to access must be discussed with patients. This should include disability information, the ability to pay for services and possibly developing a practice template on which any

staff member may record issues consistently. Services could include evening/weekend clinics, more mobile practitioners, virtual engagement using information technology and targeted funding support for fees. The challenge of providing health services timed to meet patient needs is one that many countries have grappled with.³² Despite heterogeneity in study design and reporting, there has been consistent evidence that those accessing services outside routine hours are from lower socioeconomic populations and with chronic illnesses.³³ One study from rural general practice in New Zealand noted Māori were three times more likely than non-Māori to access out-of-hours health services when provided.³⁴ How these services can be supported and funded in New Zealand is also keenly debated. Resourcing general practice to respond has previously been met with claims that adequate and appropriate out of hours services are not fiscally supported at a national level, at least not for rural services.³⁵ Implementation of the current health system review and commissioning should consider authentic engagement with communities to understand and meet their needs in a sustainable and attainable manner for those delivering primary care services—both from a human and fiscal resourcing perspective.

The Waitangi Tribunal reported that “a-one-size-fits-all” model tends to suit the needs of the majority, not those most in need, and recommended a principle of “options.”³⁶ This point talks explicitly to advocating for the availability of health services premised on Māori models of health and engagement. Correspondingly, this would align with the proposed Indigenous access framework in considering a non-linear health system configuration. Regardless, the status quo of continuing to provide existing services in existing hours of operation fails to deliver excellent health outcomes for those most in need and creates further inequity. The current model of traditional hours of operation (eg, 8.30 am to 4.30 pm or similar) is not compatible with the lives or priorities of patients.

Many factors contribute to poor management of gout. A qualitative investigation examined this practice’s response to preventing the burden of gout from the

perspective of patients.³⁶ Interviews with 23 community participants articulated that the key features pertaining to barriers are shortfalls in physical, financial and cultural access. Participants highlighted challenges with employment security and place of work as well as financial co-payments for general practitioner visits and medicines. This study provides quantification of some of these challenges.

A nurse-led gout initiative in the United Kingdom achieved best-practice management in more than 90% of patients with gout, compared with 30% under usual general practitioner-led care.³⁷ However, this was largely a cohort of older, white British men. Only 16 out of 512 participants were believed to be non-white (Indian or Pakistani ethnicity) (personal communication with the lead author). The service was offered in traditional working hours, and therefore, even with appropriate resourcing, it may not be the model to emulate for the Indigenous people in this study with significant life pressures.

Strengths

This study represents a view of the life challenges of accessing primary healthcare for people enrolled in a low cost general practice servicing a predominantly Indigenous cohort of people with gout in New Zealand. We are unaware of similar published data and believe it is unusual for primary care to include records of employment and social circumstance. This is a marker of a particular model of practice. Additionally, it provides a practice level view of the co-prevalence of long term conditions alongside gout in this cohort.

Weaknesses

Given this study was undertaken in a suburban community of low socioeconomic status and predominantly in a population

enduring the legacy of colonisation, it may not be generalisable to all populations. Further, much of the data reported are informed by the PMS and its inherent limitations.

Conclusion

Māori people with gout are disproportionately limited in access to health services because of their employment and social circumstance. Accessibility is a significant issue for those in paid employment, due to the opening hours of primary care. Those not working represent a level of social disadvantage where costs and travel to services are challenging. All components of access must be considered. In this general practice, where staff strive to deliver approachable, acceptable (culturally safe) and affordable healthcare, availability and accommodation of access was a significant limiting factor.

Further, it is very uncommon for Māori and Pasifika peoples not to have comorbidity of long-term health conditions. These people represent the demographic that every effort should be made to assure ease of access to comprehensive holistic services. The system does not have the patient at the centre in terms of access and co-creation of engagement. No matter how you consider the rhetoric for greater access for those most in need, this research highlights the reality as being the opposite for most people in this cohort. Effort must be made to ascertain and document the availability of services to people, as is the case with clinical variables. Services should be appropriately supported to reconfigure to suit all people's lives. The Crown has a duty to ensure the resourcing, the expectation and accountability that health services are responsive and accessible to those most in need.

“A right delayed is a right denied”

– Martin Luther King

Competing interests:

MH is a locum clinician at the clinic. LTK had a role as part-time locum clinician in the clinic. This work was supported by the Health Research Council of New Zealand (Te Karu 19/078).

Author information:

Leanne Te Karu: MHsc(Hons) Pharmacist Prescriber Department of General Practice and Primary Healthcare, University of Auckland, Aotearoa New Zealand.

Matire Harwood: MBChB, PhD Associate Professor Department of General Practice and Primary Healthcare, University of Auckland, Aotearoa New Zealand.

Bruce Arroll: MBChB, PhD, FRNZCGP. Professor, Head of Department of General Practice and Primary Healthcare, University of Auckland, Aotearoa New Zealand.

Linda Bryant: PhD, Pharmacist Prescriber, Department of General Practice and Primary Healthcare, University of Auckland, Aotearoa New Zealand.

Tim Kenealy: MBChB, PhD, FRNZCGP, Associate Professor of Integrated Care Department of Medicine, University of Auckland, Aotearoa New Zealand.

Corresponding author:

Leanne Te Karu Department of General Practice and Primary Healthcare, University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand
Leanne.Te-Karu@auckland.ac.nz

URL:

www.nzma.org.nz/journal-articles/the-inequity-of-access-to-health-a-case-study-of-patients-with-gout-in-one-general-practice

REFERENCES

1. Ministry of Health. 2018 Achieving Equity in Health Outcomes: Highlights of important national and international papers. Wellington: Ministry of Health.
2. Robson B, Harris R (eds). 2007. Hauora: Maori standards of health.IV :a study of the years 2000-2005. Wellington: Te Rōpū Ranga-hau Hauora a Eru Pōmare.
3. Ministry of Health. 2015. Tatau Kahukura: Māori Health Chart Book 2015. (3rd edition) Wellington: Ministry of Health
4. New Zealand Government. 2018 New Zealand Health and Disability System Review Terms of reference. Available from: <https://systemreview.health.govt.nz/about/terms-of-reference/> [cited October 2018].
5. New Zealand Government. Health Services and Outcomes Inquiry. Health Services and Outcomes Inquiry 2019 [cited 2019 May]. Ministry of Justice. Available from: <https://waitangitribunal.govt.nz/inquiries/kaupapa-inquiries/health-services-and-outcomes-inquiry/>
6. New Zealand Waitangi Tribunal. Hauora Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry [cited 2019 Dec]. 2019. Available from: <https://www.waitangitribunal.govt.nz/news/report-on-stage-one-of-health-services-and-outcomes-released/>
7. Buckley HR, Tayles N, Halcrow et al. The People of Wairau Bar: a Re-examination. *Journal of Pacific Archaeology*. 2010;1(1):1-20.
8. Prior IA, Rose BS, Harvey HPB, Davidson F. Hyperuricaemia, Gout, and Diabetic Abnormality in Polynesian People. *The Lancet*.1966;287(7433):333-8.
9. Brauer GW, Prior IA. A prospective study of gout in New Zealand Maoris. *Annals of the Rheumatic Diseases*. 1978;37(5):466-72.
10. Jackson G, Wright C, Thornley S, et al. Potential unmet need for gout diagnosis and treatment: capture-recapture analysis of a national administrative dataset. *Rheumatology*. 2012;51(10):1820-4.
11. Dalbeth N, Gow P, Jackson G, et al. Gout in Aotearoa New Zealand: are we going to ignore this for another 3 years? *New Zealand Medical Journal*. 2016;129(1429):1-3.
12. Clarson LE, Chandratre P, Hider SL, et al. Increased cardiovascular mortality associated with gout: a systematic review and meta-analysis. *European Journal of Preventive Cardiology*. 2015. 22(3):335-43.
13. Dalbeth N, House ME, Aati O, et al. Urate crystal deposition in asymptomatic hyperuricaemia and symptomatic gout: a dual energy CT study. *Annals of the Rheumatic Diseases*. 2015.
14. Jaffe DH, Klein AB, Benis A, et al. Incident gout and chronic Kidney Disease: healthcare utilisation and survival. *BMC Rheumatology*. 2019;3:11.

15. Choi HK, Curhan G. Independent Impact of Gout on Mortality and Risk for Coronary Heart Disease. *Circulation*. 2007;116(8):894-900.
16. Fisher MC, Rai SK, Lu N, et al. The unclosing premature mortality gap in gout: a general population-based study. *Annals of the Rheumatic Diseases*. 2017;76(7):1289-94.
17. Zhang W, Doherty M, Bardin T, et al. EULAR evidence based recommendations for gout. Part II: Management. Report of a task force of the EULAR Standing Committee For International Clinical Studies Including Therapeutics (ESCIIT). *Annals of the Rheumatic Diseases*. 2006;65(10):1312-24.
18. Tudor Hart J. The Inverse Care Law. *The Lancet*. 1971;297(7696):405-12.
19. Penchansky R, Thomas JW. The Concept of Access: Definition and Relationship to Consumer Satisfaction. *Medical Care*. 1981;19(2):127-40.
20. Levesque, J., M.F. Harris, and G. Russell, Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health*. 2013. 12(1): p. 18.
21. Pharmac. Achieving medicine access equity in Aotearoa New Zealand: towards a theory of change 2019 [cited 2019 Jun]. Available from: <https://pharmac.govt.nz/assets/achieving-medicine-access-equity-in-aotearoa-new-zealand-towards-a-theory-of-change.pdf>
22. Shukla N, Pradhan B, Dikshit A, et al. A Review of Models Used for Investigating Barriers to Healthcare Access in Australia. *International Journal of Environmental Research and Public Health*. 2020;17(11):4087.
23. Davy C, Harfield S, McArthur A, et al. Access to primary health care services for Indigenous peoples: A framework synthesis. *International Journal for Equity in Health*. 2016;15(1):163.
24. Winnard D, Wright C, Taylor WJ, et al. National prevalence of gout derived from administrative health data in Aotearoa New Zealand. *Rheumatology*. 2012;51(5):901-9.
25. HQSC. Atlas of Healthcare Variation 2012 [cited 2013 May 4]. Available from: <http://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-health-care-variation/gout/>
26. Masnoon N, Shakib S, Kalisch-Ellett L, et al. What is polypharmacy? A systematic review of definitions. *BMC geriatrics*. 2017;17(1):230.
27. Ministry of Health. Annual Data Explorer 2016/17: New Zealand Health Survey [Data File]. 2017. Available from: <https://minhealthnz.shinyapps.io/nz-health-survey-2016-17-annual-update>.
28. Harris, R.B, Cormack D.M, Stanley J., Experience of racism and associations with unmet need and healthcare satisfaction: the 2011/12 adult New Zealand Health Survey. *Australian and New Zealand Journal of Public Health*. 2019;43(1):75-80.
29. Winnard D, Wright C, Jackson G, et al. Gout, diabetes and cardiovascular disease in the Aotearoa New Zealand adult population: co-prevalence and implications for clinical practice. *New Zealand Medical Journal*. 2013;126(1368):54-64.
30. Tan M, Hatef E, Taghipour D, et al. Including Social and Behavioral Determinants in Predictive Models: Trends, Challenges, and Opportunities. *JMIR medical informatics*. 2020;8(9):e18084-e18084.
31. Trinacty CM, LaWall E, Ashton M, et al. Adding Social Determinants in the Electronic Health Record in Clinical Care in Hawai'i: Supporting Community-Clinical Linkages in Patient Care. *Hawai'i journal of medicine & public health : a journal of Asia Pacific Medicine & Public Health*. 2019;78(6 Suppl 1):46-51.
32. Kelly SJ, Piercy H, Ibbotson R, Fowler Davis SV. Who attends out-of-hours general practice appointments? Analysis of a patient cohort accessing new out-of-hours units. *BMJ Open*. 2018;8(6):e020308.
33. Foster H, Moffat K.R, Burns N, et al., What do we know about demand, use and outcomes in primary care out-of-hours services? A systematic scoping review of international literature. *BMJ Open*. 2020;10(1):e033481
34. Scott-Jones J, Lawrenson R, Maxwell N. Sharing after hours care in a rural New Zealand community—a service utilization survey. *Rural Remote Health*. 2008;8(4):1024.
35. Murdoch JC. Making it pay and helping us stay: the viability of a rural general practice in New Zealand. *The New Zealand Medical Journal (Online)*. 2006;119(1246):U2346.
36. Te Karu L, Kenealy T, Bryant L, et al. The long shadow of inequity for Māori with gout. *MAI Journal*. 2020;9(2):152-65.
37. Doherty M, Jenkins W, Richardson H, et al. Efficacy and cost-effectiveness of nurse-led care involving education and engagement of patients and a treat-to-target urate-lowering strategy versus usual care for gout: a randomised controlled trial. *The Lancet*. 2018;392(10156):1403-12.