

Usual primary care of older people in New Zealand: association between practice characteristics and practice activities

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ABSTRACT

INTRODUCTION: Information on the processes used by primary care practices to help identify older patients in need of assistance are limited in New Zealand.

AIM: To describe the processes used to promote early problem detection in older patients in primary care and the practice characteristics associated with the use of these proactive processes.

METHODS: Sixty practices were randomly selected from all primary care practices in three regions (52% response rate) and surveyed in 2010 to identify characteristics of practices performing the following activities: using assessment tools; auditing the practice; conducting specific clinics; providing home visits; and providing active patient follow-up. Practice level variables were examined.

RESULTS: Only 4 (7%) of 57 practices did not perform any of the activities. We found the following associations in the many comparisons done: no activities and greater level of deprivation of practice address ($p = 0.048$); more activities in main urban centres ($p = 0.034$); more main urban centre practices doing home visits ($p = 0.001$); less Canterbury practices conducting specific clinics for frail older patients ($p = 0.010$); and more Capital and Coast practices following-up patients who do not renew their prescriptions ($p = 0.019$).

DISCUSSION: There are proactive processes in place in most New Zealand practices interested in a trial about care of older people. Future research should determine whether different types of practices or the activities that they undertake make a difference to older primary care patients' outcomes.

KEYWORDS: Practice patterns; geriatric assessment; needs assessment; general practice standards

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Introduction

Comprehensive geriatric assessment is internationally recognised to be the cornerstone of optimising care for older adults.¹ A systematic review and meta-analysis in 2008 found favourable effects of preventive home visits on functional ability, provided that programmes were based on multidimensional geriatric assessment.² A review on the effectiveness of complex interventions on outcomes of nursing home admission and hospital admission suggests that older adults would

benefit from routine assessment.³ There are, however, concerns about its timing and requirements for the clinical expertise of the assessor;¹ these issues motivated the development of various initiatives to identify those at risk of deterioration who would benefit from a full assessment.⁴

The Brief Risk Identification of Geriatric Health Tool (BRIGHT) is a self-completion questionnaire consisting of 11 items on health and activities of daily living. This tool was found to

be sensitive and specific for identifying disability in community-dwelling older adults aged 75 and above.⁵ The trial of BRIGHT used as a systematic screening tool as the first step in a two-stage case finding process in primary care compared to usual care and showed that it successfully identified older adults in need, but the trial did not find clinically relevant improvements in functional ability or quality of life.⁶ Apart from increased residential care placement in the intervention group, health care use was not significantly different between the intervention and control groups suggesting that the second stage in the case finding process – referral to regional geriatric assessment and rehabilitation services – did not result in increased services or change in clinical outcomes beyond increase placement in nursing homes.⁶ Several similar preventive assessment trials have also failed to demonstrate favourable outcomes.^{7–11} Often cited reasons for the lack of effect include a potentially weak service response, similarities in range and intensity of services in subsequent care between intervention and control groups, and a relatively high standard of routine care at the time the study was conducted. We wished to investigate the use of proactive processes to identify need in older primary care patients in New Zealand.

Primary care for older adults has been criticised for being largely reactive,¹² but improvements from integration of the principles of geriatrics into mainstream care since the 1990s have also been acknowledged.¹³ In New Zealand, there is some indication of a proactive approach to problem detection in older patients. For example, older people can attend special clinics such as diabetes clinics that are held in an estimated 54% of practices, 70% of practices have reported conducting rest home visits,¹⁴ and 97% of primary care physicians from NZ reported use of electronic medical records in international surveys conducted in 2009 and 2012.¹⁵ Data on the use of other systematic processes that can help identify older patients in need of assistance are, unfortunately, lacking in New Zealand.

It makes intuitive sense that some practices are better able to support these proactive processes depending on characteristics such as size, location, and population served; however,

WHAT GAP THIS FILLS

What is already known: There is some indication of a proactive approach to problem detection in older primary care patients in New Zealand.

What this study adds: Most practices, at least in those interested in a trial about care of older people, perform activities that promote early problem detection in older patients. We did not find a clear typology of practices having these proactive processes in place.

evidence to support direct association between practice characteristics and performance is scant. Investigations examining the association of practice characteristics and quality of care scores appear to be closest to this area of inquiry, as assessments of quality include a range of indicators relating to management of chronic diseases such as blood pressure readings in patients with cardiovascular conditions and diabetes, checking proper inhaler technique in patients with asthma, assessing behavioural risk factors, and care planning. Study findings are, thus far, not sufficiently consistent to suggest practice changes – evidence on the influence of practice size on quality of care is a case in point. Quality of care scores for asthma, diabetes and cardiovascular diseases have been reported to be higher in practices with only one to four GPs compared with larger practices.¹⁶ However, other investigations have failed to demonstrate a significant association between quality of care for specific disease entities and number of GPs in the practice¹⁷ or have found contrasting support in favour of larger practices.¹⁸ Moreover, with regard to overall quality of care, higher scores have been reported in group practices compared to single-handed practices.^{19,20} The present study aims to describe the use of proactive processes to detect problems in older patients in primary care, and the practice characteristics that are associated with the use of these approaches.

Methods

The present study used existing data from the BRIGHT trial, described in detail elsewhere.^{5,6,21,22} Briefly, it is a cluster randomised controlled study that examined the effect of proactive two-step case finding using: (1) the

BRIGHT tool as a screening questionnaire followed by (2) referral to regional geriatric services on the outcomes of residential care placement, hospitalisations, disability, and quality of life. The study was conducted in three regions in New Zealand. We randomly selected 116 practices from all primary care practices in participating regions; those that had enrolled patients aged 75 and above were eligible.²¹ Ethics approval for conducting the study was granted by the New Zealand Health and Disability Multi-region Ethics Committee.

Practice managers completed a fax survey in 2008–2009 to provide information including number of GPs in the practice; number of locums in the practice; total number of enrolled patients; number of enrolled patients aged 75 and above; and number of enrolled Māori patients. These were used to create variables that describe the age and ethnic composition of patients enrolled in the practice. The proportion of locum physicians in the practice was also calculated. Practice size was defined in two ways: number of GPs and number of patients enrolled in the practice. Practices were grouped based on the tertiles of compositional and practice size variables. The addresses of practices were entered in the Classification Coding System version 4.0.2²³ to obtain meshblock 2006 codes, which were then linked to area concordance files to determine index of deprivation score²⁴ and type of urban area: main urban area or 'other'. Practices located in urban areas other than main urban centres were grouped under the 'other' category.

Data on practice activities was collected through a follow-up fax survey conducted in 2010. This survey sought to determine whether or not practices were already proactively identifying frail older patients who might need assistance before the introduction of the BRIGHT intervention. Practices were asked if they routinely performed the following: use of a formal assessment tool such as the Geriatric Depression Scale; audit of the practice; clinics such as influenza vaccination clinics; home visits; and active follow-up of patients who have not had a check up in a long time, have not renewed their prescriptions, or have missed their appointments. A summary score for number of reported

activities was calculated by adding the number of positive responses to the five activities included in the practice survey. We also computed an alternative score that considered types of follow-up as separate activities (range 0–7).

Stata 11.0 was used to generate descriptive statistics and calculate Fisher's exact tests comparing the distribution of practices that reported performing selected activities according to practice characteristics. Our calculations included practices with non-missing values on the variables of interest.

Results

Sixty practices participated in the trial. Their characteristics are presented in Table 1. Practices located in areas of high deprivation (NZDep 9–10) comprised 28% of the sample. Most were based in main urban centres (93%). Over a third of the practices had seven or more GPs (35%); 39% had at least 5,000 patients in the practice roster. On average, locum physicians comprised 24% of physicians in the practice (s.d. = 18). Patients aged 75 and above ranged from less than 1% to 19% of patients enrolled in the practices, with approximately a third of practices having at least 10% of its patients aged 75 and above. The proportion of Māori patients in the practice roster ranged from less than 1% up to 60%.

Table 1 also shows the number and types of activities performed by the practices. Only four practices did not routinely perform any of the five activities that can help identify frail older patients who need assistance (7%). Regular home visiting (81%) was the most commonly reported activity performed by the practices. Over three fourths of practices in the sample also followed-up their patients regularly (79%). More practices reported regular follow-up of patients who miss their appointments (75%) compared to those who have not had a check up in a long time (38%) or do not renew their prescriptions (27%). More than a third of the practices held specific clinics for frail older patients (38%). Only 12% regularly audited their practice to identify frail older patients who may need additional support or an assessment. Using a formal assessment tool was the least commonly reported activity (7%).

Table 2 shows that the number of activities performed by practices were significantly different according to two practice characteristics: level of deprivation ($p = 0.048$) and type of urban area ($p = 0.034$). When specific activities were examined, there were, likewise, no significant differences for most practice characteristics. Home visiting was reported by 87% of practices in main urban centres; none of the practices in other types of urban areas reported this ($p = 0.001$). Only 17% of practices in Canterbury DHB regularly held clinics for frail older patients, whereas 60% of those in Capital and Coast DHB and 42% of those in Bay of Plenty DHB reported doing so ($p = 0.010$).

Regular patient follow-up was not significantly different in any of the practice characteristics; differences according to DHB were only noted when the basis for follow-up was considered. Half of the practices in Capital and Coast DHB followed-up patients who do not renew their prescriptions; in Canterbury DHB and Bay of Plenty DHB, it was only 13% and 17%, respectively ($p = 0.019$).

Discussion

This paper investigated the usual primary care of older people and whether or not practice characteristics potentially were associated with the presence of systematic processes in usual care that would proactively identify frail older patients who may need assistance. The findings suggest that some activities are routinely done in most practices, at least this group of practices interested in a trial about care of older people, and there is no clear typology of 'good' and 'bad' practices with regard to activities to promote early problem detection in the population of older people.

The small number of practices that did not routinely perform any of the activities included in the survey suggests that primary care may not be as reactive as it has previously been criticised to be. Considering older adults' frequent use of primary care services²⁵ and practices' performance of activities to promote early problem detection, we can expect levels of unreported or unrecognised needs to be low for those engaging with primary care regularly.

However, demonstrating further benefits of screening the general older population to identify those at risk of deterioration may prove to be difficult. It should also be emphasised that, as the interRAI trial in New Zealand has already shown, problem identification does not guarantee that service response will be adequate.⁹ The analysis of BRIGHT patient-level data illustrate this concern: finding that 27% of patients in the sample had an unmet need.²² Collectively, the available evidence draws our attention towards

Table 1. Characteristics of sample practices ($n = 60$)

Variable	Missing	Freq (%)
Location		
NZDep06	0	
1st to 8th decile		43 (72)
9th to 10th decile		17 (28)
Type of urban area		
Main urban centre		56 (93)
Other urban		4 (7)
DHB		
Canterbury		24 (40)
Capital and Coast		24 (40)
Bay of Plenty		12 (20)
Size of practice		
At least 7 GPs	6	19 (35)
At least 5,000 patients in roster	11	19 (39)
Practice composition		
≥ 30% locum physicians	6	18 (33)
≥ 10% patients aged 75+	11	16 (33)
≥ 10% Māori patients	11	18 (37)
Practice activities		
Number of activities		
None		4 (7)
1 to 2		36 (63)
3 to 5		17 (30)
Formal assessment tool		
Audit	3	7 (12)
Clinics for frail older patients	4	21 (38)
Home visits	3	46 (81)
Systematic follow-up		
No check up in a long time	4	21 (38)
Prescriptions not renewed	4	15 (27)
Missed appointments	3	43 (75)

broader issues that can influence primary care-based efforts to improve older patients' outcomes such as funding of health and social services.

The present study, hence, echoes prior studies conducted in New Zealand that have underlined the importance of taking an integrative approach

Table 2. Number and types of practice activities according to practice characteristics

Practice characteristics	Number of activities ^{††}			Type of practice activities				
	None <i>n</i> = 4 (%)	1 to 2 activities <i>n</i> = 36 (%)	3 to 5 activities <i>n</i> = 17 (%)	Formal assessment tool <i>n</i> = 57 (%)	Audit <i>n</i> = 57 (%)	Clinics for frail older patients <i>n</i> = 56 (%)	Home visits <i>n</i> = 57 (%)	Systematic follow-up <i>n</i> = 57 (%)
Location								
NZDep06 (<i>n</i> = 60) †								
1st to 8th decile	1 (2)	29 (71)	11 (27)	3 (7)	5 (12)	13 (33)	35 (86)	34 (83)
9th to 10th decile	3 (19)	7 (44)	6 (38)	1 (6)	2 (13)	8 (50)	11 (69)	11 (69)
Type of urban area (<i>n</i> = 60) §								
Main urban centre	2 (4)	34 (64)	17 (32)	4 (8)	7 (13)	21 (40)	46 (87)	43 (81)
Other urban	2 (50)	2 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (50)
DHB (<i>n</i> = 60) § ‖								
Canterbury	1 (4)	18 (75)	5 (21)	0 (0)	2 (8)	4 (17)	18 (75)	20 (83)
Capital and Coast	1 (5)	11 (52)	9 (43)	3 (14)	4 (19)	12 (60)	19 (91)	17 (81)
Bay of Plenty	2 (17)	7 (58)	3 (25)	1 (8)	1 (8)	5 (42)	9 (75)	8 (67)
Size of practice								
Number of physicians (<i>n</i> = 54)								
1 to 3 GPs	1 (8)	8 (67)	3 (25)	0 (0)	0 (0)	4 (33)	9 (75)	10 (83)
4 to 6 GPs	1 (5)	17 (77)	4 (18)	1 (5)	3 (14)	8 (36)	19 (86)	15 (68)
7 GPs or more	2 (12)	7 (41)	8 (47)	2 (12)	3 (18)	7 (41)	13 (77)	14 (82)
Number of patients (<i>n</i> = 49)								
Less than 3,000	2 (12)	11 (65)	4 (24)	0 (0)	2 (12)	7 (41)	13 (77)	11 (65)
3,000 to 4,999	0 (0)	8 (80)	2 (20)	1 (10)	0 (0)	3 (30)	10 (100)	8 (80)
5,000 or more	2 (11)	10 (53)	7 (37)	2 (11)	4 (21)	7 (37)	14 (74)	16 (84)
Practice composition								
Locum physicians (<i>n</i> = 54)								
Less than 20%	2 (11)	12 (67)	4 (22)	2 (11)	3 (17)	5 (28)	14 (78)	15 (83)
20% to 29%	2 (11)	11 (61)	5 (28)	0 (0)	2 (11)	7 (39)	16 (89)	11 (61)
30% or more	0 (0)	9 (60)	6 (40)	1 (7)	1 (7)	7 (47)	11 (73)	13 (87)
Patients aged 75+ (<i>n</i> = 49)								
Less than 5%	1 (6)	10 (63)	5 (31)	1 (6)	3 (19)	7 (44)	14 (88)	11 (69)
5% to 9%	1 (7)	8 (57)	5 (36)	1 (7)	1 (7)	6 (43)	10 (71)	12 (86)
10% or more	2 (13)	11 (69)	3 (19)	1 (6)	2 (13)	4 (25)	13 (81)	12 (75)
Māori patients (<i>n</i> = 49)								
Less than 5%	1 (8)	8 (67)	3 (25)	0 (0)	2 (17)	2 (17)	9 (75)	10 (83)
5% to 9%	2 (11)	13 (68)	4 (21)	1 (5)	2 (11)	6 (32)	16 (84)	14 (74)
10% or more	1 (7)	8 (53)	6 (40)	2 (13)	2 (13)	9 (60)	12 (80)	11 (73)

* Row totals may exceed 100% due to rounding error.

† Also tested differences when types of follow-up were considered to be separate activities (max. value of 7), associations are similar unless otherwise indicated.

‡ $p = 0.048$ and $p = 0.060$ when maximum number of activities is 5 and 7, respectively.

§ $p \leq 0.05$ using Fishers exact test.

‖ In separately testing differences in types of follow-up according to practice characteristics, we found more practices in Capital and Coast that followed-up patients who do not renew their prescriptions ($p = 0.019$).

that encompasses planning to delivery of health services.^{9,26}

Although a few practice characteristics were found to be significantly associated with the total number or specific types of activities examined, the evidence is insufficient to suggest that certain configurations of practices adopt a more proactive approach to detect problems in older primary care patients. It should, however, be noted that it is possible that in choosing to dichotomise responses rather than using an elaborate criteria for assessing the extent to which the activities were performed, we were unable to capture how practices with certain characteristics are better able to support these systematic processes to proactively identify need. In addition to this, we also used a conservative test in examining performance of activities by practice characteristics because our sample size was small and we expected cells with low frequencies. In view of the many comparisons done, we cannot discount the possibility that the small number of significant associations found may be due to chance alone.

Caution must be exercised when interpreting the findings as the sample of practices was not representative of general practices in the country. The practices described in the present study were recruited from three DHBs with a 52% response rate at the practice level;²¹ little can be assumed about the practices that did not take part. In addition to this, BRIGHT trial practices were all located in urban areas, which further challenges its generalisability.

Future investigations can link practice- and patient-level data and perform multilevel analyses to simultaneously model the influence of individual (patient) and contextual (practice) factors on health outcomes. Possible areas of inquiry include determining whether patient outcomes vary according to practice characteristics and performance of practice activities; exploring which practice characteristics and practice activities contribute to positive changes in older patients' health outcomes over time; and comparing associations in countries with different structures of funding, governance and primary care organisation.

Conclusion

We found that most practices have proactive processes in place, to identify need among older people, at least in practices interested in a trial about care of older people. As such, low levels of unreported or unrecognised needs may be expected among older patients who engage with primary care regularly. We need to determine whether different types of practices or the activities that they undertake make a difference to older primary care patients' outcomes.

References

1. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC Med.* 2012;10(4).
2. Huss A, Stuck AE, Rubenstein LZ, et al. Multidimensional preventive home visit programs for community-dwelling older adults: a systematic review and meta-analysis of randomized controlled trials. *J Gerontol.* 2008;63(3):298–307. doi:10.1093/gerona/63.3.298
3. Beswick AD, Rees K, Dieppe P, et al. Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *Lancet.* 2008;371(9614):725–35. doi:10.1016/S0140-6736(08)60342-6
4. Fletcher A. Multidimensional assessment of elderly people in the community. *Br Med Bull.* 1998;54(4):945–60. doi:10.1093/oxfordjournals.bmb.a011740
5. Kerse N, Boyd M, McLean C, et al. Utility of a primary health care case finding tool to identify older people with disability, the BRIGHT tool. *Age Ageing.* 2008;37(5):553–8. doi:10.1093/ageing/afn145
6. Kerse N, McLean C, Moyes SA, et al. The cluster-randomized BRIGHT trial: proactive case finding for community-dwelling older adults. *Ann Fam Med.* 2014;12(6):514–24. doi:10.1370/afm.1696
7. Metzger SF, van Rossum E, de Witte LP, et al. Effectiveness of interdisciplinary primary care approach to reduce disability in community dwelling frail older people: cluster randomised controlled trial. *BMJ.* 2013;347:f5264. doi:10.1136/bmj.f5264
8. Rubenstein LZ, Alessi CA, Josephson KR, et al. A randomized trial of a screening, case finding, and referral system for older veterans in primary care. *J Am Geriatr Soc.* 2007;55(2):166–74. doi:10.1111/j.1532-5415.2007.01044.x
9. Parsons M, Senior H, Mei-Hu Chen X, et al. Assessment without action; a randomised evaluation of the interRAI home care compared to a national assessment tool on identification of needs and service provision for older people in New Zealand. *Health Soc Care Community.* 2013;21(5):536–44. doi:10.1111/hsc.12045
10. Ploeg J, Brazil K, Hutchison B, et al. Effect of preventive primary care outreach on health related quality of life among older adults at risk of functional decline: randomised controlled trial. *BMJ.* 2010;340:c1480. doi:10.1136/bmj.c1480
11. van Hout HPJ, Jansen APD, van Marwijk HWJ, et al. Prevention of adverse health trajectories in a vulnerable elderly population through nurse home visits: a randomized

- controlled trial [ISRCTN05358495]. *J Gerontol A Biol Sci Med Sci*. 2010;65A(7):734–42. doi:10.1093/gerona/glq037
12. De Lepeleire J, Iliffe S, Mann E, Degryse J. Frailty: an emerging concept for general practice. *Br J Gen Pract*. 2009;59(562):e177–82. doi:10.3399/bjgp09X420653
 13. Beswick AD, Gooberman-Hill R, Smith A, et al. Maintaining independence in older people. *Rev Clin Gerontol*. 2010;20(02):128–53. doi:10.1017/S0959259810000079
 14. Pande M. A Profile of New Zealand General Practices in 2007. Royal New Zealand College of General Practitioners; 2008. Occasional Paper 9.
 15. Schoen C, Osborn R, Squires D, et al. A survey of primary care doctors in ten countries shows progress in use of health information technology, less in other areas. *Health Affairs*. 2012;31(12):2805–16.
 16. Centre for Primary Health Care and Equity. Managing chronic disease: what makes a general practice effective? 2006 [cited 2015 August 20]. Available from: <https://cphce.unsw.edu.au/research/prevention-management-chronic-diseases/practice-capacity-chronic-disease-management>.
 17. Barton C, Proudfoot J, Amoroso C, et al. Management of asthma in Australian general practice: Care is still not in line with clinical practice guidelines. *Prim Care Respir J*. 2009;18(2):100–5. doi:10.3132/pcrj.2008.00059
 18. Campbell SM, Hann M, Hacker J, et al. Identifying predictors of high quality care in English general practice: Observational study. *BMJ*. 2001;323:784. doi:10.1136/bmj.323.7316.784
 19. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: A national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004–5. *BMC Fam Pract*. 2006;7(68).
 20. Kelly E, Stoye G. Does GP Practice Size Matter? GP Practice Size and the Quality of Primary Care. London: 2014 IFS Report R101.
 21. McLean C, Kerse N, Moyes SA, et al. Recruiting older people for research through general practice: The Brief Risk Identification Geriatric Health Tool trial. *Australas J Ageing*. 2014;33(4):257–63. doi:10.1111/ajag.12058
 22. Wilkinson-Meyers L, Brown P, McLean C, Kerse N. Met and unmet need for personal assistance among community-dwelling New Zealanders 75 years and over. *Health Soc Care Community*. 2014;22(3):317–27. doi:10.1111/hsc.12087
 23. Statistics New Zealand. Classification Coding System. Version 4.0.2 [software]. 2014 [cited 2015 Feb 3]. Available from: www.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/download-the-classification-coding-system.aspx
 24. Salmond C, Crampton P, Atkinson J. NZDep2006 Index of Deprivation. Wellington: Department of Public Health, University of Otago; 2007.
 25. Crampton P, Jatrana S, Lay-Yee R, Davis P. Exposure to primary medical care in New Zealand: number and duration of general practitioner visits. *N Z Med J*. 2007;120(1256):U2582.
 26. Brown PM, Wilkinson-Meyers L, Parsons M, et al. Cost of prescribed and delivered health services resulting from a comprehensive geriatric assessment tool in New Zealand. *Health Soc Care Community*. 2009;17(5):514–21. doi:10.1111/j.1365-2524.2009.00855.x

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COMPETING INTERESTS

The authors have no conflicts of interest to declare.