Original Research Paper

Practice Nurses in the Waikato, 1991-1992: What was their patient mix and pattern of care?

Peter Davis PhD, Rose Lightfoot MPH, Elizabeth Finn MPharm, Roy Lay-Yee MA, Barry Gribben MBChB, Brian McAvoy MD

Peter Davis is professor in the department of public health and general practice, Christchurch Medical School, University of Otago

Rose Lightfoot is education development officer at FirstHealth, Bay of Plenty

Elizabeth Finn is a doctoral student in the department of community health, faculty of medicine and health science, University of Auckland

Roy Lay-Yee is a research fellow in the department of community health, faculty of medicine and health science, University of Auckland

Barry Gribben is a senior research fellow in the department of general practice, faculty of medicine and health science, University of Auckland

Brian McAvoy is professor in the department of primary health care, University of Newcastle Medical School, Newcastle, UK

Key points

- About a quarter of patient visits to the GP are also associated with a practice nurse consultation
- There is little difference between nurses and doctors in the socio-demographic characteristics of the patients visiting them
- Patients consulting the nurse are more

ABSTRACT

Aims: To compare patient mix and patterns of care provided by practice nurses and GPs in the Waikato.

Methods: Data are drawn from two sources for the period 1991-1992 in the Waikato: a survey of patients attending practice nurses, generating a total sample of 1329 patient encounters; an analysis of a 1 per cent sample of visits to the GP equating to nearly 12,000 encounters.

Results: Three-quarters of patients attending practice nurses were in their sole care at that encounter. In socio-demographic terms they differed little from those attending the doctor, except that they were more likely to be beneficiaries and female. Nearly half of all these patients presented for an examination, and many had their fee either reduced or waived. For the great majority of patients, contact with the practice nurse involved follow-up for a single problem that was relatively minor and had limited diagnostic uncertainty. Most problems presented

likely to have their fee waived or reduced, and their visit is usually associated with a single, non-symptomatic problem, that is minor, relatively straightforward, and attended for follow-up
- Practice nurses are more likely to report a complete examination and active follow-up and to feel that they have established good rapport with their patients

• With the changing circumstances of practice nursing and the possibilities of expanded clinical duties in the future, further research is needed

were non-symptomatic.

Conclusion: While practice nurses saw a cross-section of patients attending the GP, mostly in their sole care, these were predominantly for follow-up work and for non-symptomatic conditions. With the changing circumstances of practice nursing and the possibilities of expanded clinical duties in the future, further research on these patterns of care is needed.

INTRODUCTION

Since the establishment of the salary subsidy for urban practice nurses in the early 1970s,[1] the practice nurse has emerged as a key resource in primary health care in New Zealand. As the scope of their role in general practice has expanded, practice nurses are thought to have assumed responsibility for a wide range of activities, particularly general assessment and surveillance procedures.[2] Yet, there remains considerable debate about the appropriate role for these practitioners in the primary care setting.[3] Indeed, with the recent review of nursing[4] and the possibility of prescribing rights for these personnel,[5] there is now a particular pertinence of this debate to current workforce policy.

Although research has been carried out on the role and scope of activities of practice nurses,[6] to date no work has been carried out in New Zealand documenting the nature of the client contact work carried out by practice nurses. This paper will compare the patient mix and patterns of care for nurses and doctors in a representative sample of general practice encounters for the Waikato region over the period 1991-92.

METHOD

The data for this paper originate from a survey of general practice carried out between September 1991 and August 1992 in the Waikato. Full details of the study site are published elsewhere.[7] Information relating to encounters between GPs, practice nurses and their patients was collected using an encounter report form modelled on that used in the National Ambulatory Medical Care Survey in the US.[8]

The practice nurses participated in the survey in the same week as their practice doctors, ie, four single weeks over the course of the year _ and administered the questionnaire to one in four of their patients. Eighty-nine per cent of the 107 practices in the region participated initially, with 79 per cent of nurses working in these practices taking part in the study. An overall response rate of 69 per cent of these practice nurse encounters yielded information on 1329 consultations. Nearly 12,000 encounters were generated as a 1 per cent sample of the corresponding survey of patient visits to the GP.

The nurse completed each patient encounter record at the time of the contact. Items included age, sex, occupation, ethnic group, diagnosis, severity of condition, and a full log of diagnostic, therapeutic and disposition activities. Further details of sampling and data collection, including a copy of the encounter form and a

description of variable definitions, have been outlined in a previous paper.[7]

Comparisons were made among patients according to whether their care was given in sole or shared consultations.

"Sole" consultations were identified as those where care was given only either by the practice nurse (N=901) or by the doctor (N=7811). In "shared" encounters the patient was attended by both practitioners, although data was collected by only one, either the practice nurse (N=285) or the doctor (N=2346) respectively.

It should be noted that these data represent encounters not patients, and thus there is a chance that the same patient may appear more than once in the data set. This possibility of duplication, together with the clustering of encounters by practitioner (nurse and doctor), violate the assumption of statistical independence that is fundamental to significance testing. Therefore, statistical tests are not presented in this paper.

RESULTS

Table 1 outlines the distribution of patients according to socio-demographic characteristics _ gender, ethnic affiliation, age group, beneficiary status and socio-economic status. Comparing patients who had been either only to a nurse or only to a doctor, it appears that nurses were more likely to see women and beneficiaries, but otherwise there were few systematic or marked differences. Differences were even less apparent for "shared" patients and in the overall figures.

TABLE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PATIENTS, BY CONTACT AND PROVIDER TYPE

Socio-demographic (sample size)	Practice nurse			General Practitioner		
	Total (N=1329)	Sole (N=901)	Shared (N=285)	Shared (N=2346)	Sole (N=7811)	Total (N=11,888)
% Male	38.1	34.6	41.8	41.1	42.6	42.1
% European	81.0	81.1	82.6	77.5	79.5	79.1
% 15-44	36.6	36.0	35.1	41.0	38.6	39.4
% Beneficiary	39.7	39.6	40.4	33.3	33.1	32.9
% Lower SES*	45.3	45.1	49.3	44.7	43.6	43.9

* Elley-Irving Groups 4, 5 and 6

In Table 2 a summary is provided of a number of key features of patients at the point of their entry to care. While there was little difference in whether or not the patient was new to the practice, one half of all patients attending only the nurse were distinguished by their attendance for an examination and by the way in which they were charged for their visit (fee either waived or reduced). Patients attending the nurse were also more likely to have been called in by the attendant provider.

TABLE 2: ENTERING THE PROCESS OF CARE, BY CONTACT AND PROVIDER TYPE

Attributes at entry	Practice nurse			General Practitioner		
	Total (N=1329)	Sole (N=901)	Shared (N=285)	Shared (N=2346)	Sole (N=7811)	Total (N=11,888)
% Patient new to practitioner or practice	16.5	15.5	20.5	14.9	15.1	15.1
% Fee waived or reduced	44.9	61.2	30.0	17.5	20.6	20.3
% Practitioner-initiated visit	22.2	20.4	26.6	17.6	11.6	13.2
% Reason for visit – examination	48.7	59.8	33.0	24.6	13.1	16.2

Table 3 assesses various features of the encounter and the presentation of the patient's condition. The overwhelming proportion of patients attending the nurse presented with a single problem. In most cases these were problems with no associated disability or diagnostic uncertainty. In about half of these instances, the

problem being presented was for follow-up. This pattern was also reflected in the longer period of delay that had elapsed since problem onset. Nurses were also more likely than doctors to believe that they had established good rapport with the patient.

TABLE 3: THE PROCESS OF CARE, BY CONTACT AND PROVIDER TYPE

Features of care	Practice nurse			General Practitioner		
	Total (N=1329)	Sole (N=901)	Shared (N=286)	Shared (N=2345)	Sole (N=7811)	Total (N=11,888)
% One problem presented	89.6	90.6	87.0	67.9	68.1	68.3
% Follow-up problem presented	60.6	62.9	43.6	30.6	23.3	25.6
Average no. of days since problem onset *	4	5	2	3	3	3
% No disability *	70.1	73.9	58.0	41.1	38.0	38.7
% No diagnostic uncertainty *	78.8	80.4	72.2	56.7	51.2	52.9
% High rapport	66.4	63.7	77.5	54.7	52.5	53.7

* Median. First diagnosis, new episodes of illness only.
^ Disability = inability to fulfil some or all usual obligations of a person of comparable age.
# In comparison with "low" and "high" diagnostic uncertainty.

In Table 4 the major diagnostic categories characterising the pattern of care of nurses and doctors are itemised. Comparing patients attending only the nurse and only the doctor respectively, it is clear that, while 40 per cent of sole nurse contacts were for non-symptomatic visits, this was true of only 10 per cent of sole doctor encounters. Shared visits for both providers were characterised more by the treatment of accidents and circulatory problems in addition to non-symptomatic conditions. Other areas of importance for nurses were disorders related to the endocrine, nutrition and metabolic systems (diabetes, obesity, vitamin B12 deficiency), infectious conditions (viral illness, thrush) and skin problems (abscess, cellulitis, rashes).

TABLE 4: TOP FIVE DIAGNOSTIC CATEGORIES * BY CONTACT AND PROVIDER TYPE

Practice nurse		General Practitioner	
Sole (%) (Total N=639)	Shared (%) (Total N=267)	Shared (%) Total N=3255)	Sole (%) (Total N=10,637)
Non-symptomatic (41.2)	Non-symptomatic (29.2)	Non-symptomatic (20.0)	Respiratory (16.3)
Circulatory (14.4)	Accidents (21.0)	Accidents (13.5)	Skin (11.2)
Endocrine, nutrition, metabolic (9.1)	Skin (9.8)	Respiratory (10.9)	Accidents (10.1)
Accidents (5.6)	Circulatory (6.7)	Circulatory (8.6)	Non-symptomatic (10.0)
Infectious (5.1)	Infectious (6.0)	Skin (8.7)	Circulatory (8.2)
75.4% of all problems	71.5% of all problems	61.8% of all problems	55.7% of all problems

* OXMIS diagnostic categories. Non-symptomatic refers to conditions not related to illness.

Table 5 outlines some key indicators of activity for those areas where direct comparison between nurses and doctors is possible. While there seemed to be little difference between the two groups in the number of general examinations, investigations, or encounters without treatment, nurses were more likely to report a complete history and active follow-up.

TABLE 3. PATTERN OF CLINICAL ACTIVITY BY CONTACT AND PROVIDER TYPE

Clinical activities	Practice nurse			General Practitioner		
	Total (N=1329)	Sole (N=901)	Shared (N=285)	Shared (N=2346)	Sole (N=7811)	Total (N=11,888)
% Complete history *	29.4	23.8	44.4	19.4	16.9	18.1
% General examination	16.2	11.3	24.1	22.1	18.2	19.4
% Investigation ordered	16.1	14.2	21.8	22.2	15.8	16.9
% No therapy	12.1	13.2	10.2	12.6	15.4	15.5
% Active follow-up	43.6	43.2	46.3	45.6	33.6	36.2

* Defined as a search for symptoms in all or most systems.

DISCUSSION AND CONCLUSION

While a number of studies have been carried out on the scope of work,[9] workload[10] and perceived role of practice nurses,[11] little systematic research has been carried out on the pattern and content of client contact for this important provider group in primary care.[12]

Despite its potential shortcomings _ notably the limited geographical region from which the study sample is drawn and the distant point in time at which the data was collected _ this study offers a descriptive account of the work of practice nurses. Such information provides, for the first time, baseline data about the role of the practice nurse in the delivery of primary care in New Zealand.

In summary, approximately one quarter of the practice nurse encounters reported here were associated with a visit to the doctor as well. The socio-demographic mix differed little from patients seen by GPs, except for the slightly higher proportions of beneficiaries and females. Patients seeing the practice nurse were much more likely to have their fee waived or reduced and to cite an examination as their principal reason for the visit. In general, single, non-symptomatic problems were presented; these tended to be minor and straightforward and they were usually attended for follow-up. A complete history and active follow-up were more likely. Nurses felt that they had good rapport with their patients, particularly with those who had also been to the doctor.

These data provide a basis for more clearly defining the current and future clinical role of the practice nurse, identifying educational requirements for this role, and assessing the likelihood for its possible development in the future.[13] Such information has a strategic significance both for health restructuring more broadly[14] and for the potential reshaping of primary and secondary care services.[15]

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Correspondence: Professor Peter Davis, Department of Public Health and General Practice, Christchurch School of Medicine, PO Box 4345, Christchurch, New Zealand.

References

1. McLennan LJ. A survey of the fully subsidised practice nurse in New Zealand. Wellington, Royal New Zealand College of General Practitioners, 1984.

2. Lightfoot R, Davis P, Finn E, Lay-Yee R, Gribben B, McAvoy B. Practice nurses in the Waikato, 1991-1992: occupational profile, not Practice nurses in the Waikato, 1991-1992, I: an occupational profile, 1992-1992. *NZ Med J*, 1999; 112: 26-28.

3. Hounsell D. Report to the Taskforce on Strategic Planning for the Future of General Medical Practice: A practice nurse perspective. Wellington, New Zealand Nurses' Organisation.

4. Ministerial Taskforce on Nursing. Report of the Ministerial Taskforce on Nursing. Wellington, Ministry of Health, 1998.

5. Ministry of Health. Consultation document: Nurse prescribing in aged care and child family health. Wellington, Ministry of Health, 1998.

6. Mortlock B. The business of caring: Practice nurses in primary health care. Unpublished MA Thesis. Christchurch, University of Canterbury.

7. McAvoy B, Davis P, Raymont A, Gribben B. The Waikato Medical Care (WaiMedCa) Survey 1991-1992. *NZ Med J* 1994; 107 Suppl 2: 387-433.

8. National Center for Health Statistics. National ambulatory medical care Survey: Background and methodology, United States. Vital and Health Statistics 1974; Series 2, No. 61. DHEW Pub. No. (HRA) 74-1335. Health Resources Administration. Washington: US Government Printing Office.

9. Marsh GN, Dawes ML. Establishing a minor illness nurse in a busy general practice. *BMJ* 1995; 310: 778-80.

10. Hibble A. Practice nurse workload before and after the introduction of the 1990 contract for general practitioners. *Brit J Gen Pract* 1995; 45: 35-7.

11. Mackereth CJ. The practice nurse: roles and perceptions. *J Adv Nurs* 1995; 21: 1110-16.

12. Stilwell B, Greenfield S, Drury M, Hull FM. A nurse practitioner in general practice; working style and pattern of consultations. *J R Coll Gen Pract* 1987; 37: 154-7.

13. Atkin K, Lunt N. The role of the practice nurse in primary health care: managing and supervising the practice nurse resource. *J Nurs Manage* 1996; 4: 85-92.

14. Bradshaw PL. The recent health reforms in the United Kingdom: some tentative observations on their impact on nurses and nursing in hospitals. *J Adv Nurs* 1995; 21: 975-9.

15. McCormick IR. Primary and secondary care integration. *NZ Med J* 1994; 107: 425-7.