

The financial impact of clinical task substitution between practice nurses and GPs in New Zealand primary care centres

Martin Hefford, Tom Love, Jacqueline Cumming, Mary Finlayson, Antony Raymont

Abstract

Aim To describe the financial impact on practice owners of increased clinical task substitution between practice nurses and GPs in New Zealand (NZ) primary care settings.

Method Case studies of 9 primary health care centres involving: interviews; collation of service and financial information; and nurse and GP diaries covering 1826 consultations. Results were compared with previous NZ large N survey results to develop a model predicting the financial impact of task substitution.

Results The proportion of general practice primary care consultations undertaken by nurses varied from 4% to 46% of total recorded consultations. The actual financial impact for a practice owner of substituting more nursing time for GP time is highly dependent on the following variables: nurse cost per minute relative to GP cost minute; nurse consult duration relative to GP consult duration; nurse consult revenue relative to GP consult revenue; and the proportion of nurse consults also requiring GP time.

Conclusion Practice nurses can (and in some practices in NZ, do) provide a broad set of primary care services, including undifferentiated general consultations. For some practices, increasing the proportion of nurse consults and reducing GP consults, would result in significantly improved profitability—for others, the opposite applies. Clinical task substitution is one option to address the forecast increase in demand associated with population aging.

General practitioners in New Zealand (NZ) are ageing and increasingly preferring to work part time.¹ One result has been that patients in some areas of NZ have been unable to enrol with a primary care practice for ongoing care, or have had difficulty obtaining same/next day access once enrolled.²

Statistics NZ forecasts that the population aged over 65 years will increase from 550,000 in 2009 to 1 million in the late 2020s. Given that mean primary care consultation rates among those over 65 are more than twice those for the 25–44 year age group (8.6 visits per year versus 3.1) the likely impact on GP workloads (or on access to care) is significant.^{3,4}

The New Zealand Primary Health Care Strategy was intended to help address this by encouraging more multidisciplinary team-based models of care—but, in practice, the extent to which models of care have changed is highly variable.^{5–7}

Commentators have argued that primary care centres that delegate a higher proportion of clinical work to practice nurses can provide access for larger enrolled populations

with the same GP workforce.⁸ One of the barriers to achieving this may be the perceived or actual financial consequences of increasing the ratio of nurse to GP time.⁹

This study was commissioned by the previous Chief Nurse of the Ministry of Health, who, in discussing these issues with GPs had repeatedly heard the view that primary care practices are better off hiring another GP associate than another nurse, because GP associates had a wider scope of work and generated more income.

A major aim of the study was to develop a financial model that replicated key features of the NZ primary care financial environment, so as to determine the financial impact on practice owners of delegating clinical tasks (especially consultations) from GPs to practice nurses. Such a model could usefully inform practice owners' decisions on employment of clinical staff and associated models of care.

Method

We employed a mixed methods approach, including:

- Literature review—to identify previously revealed differences in the cost and effectiveness of nurse versus GP provision of specific primary care services;
- Analysis of NZ-based quantitative studies—to derive average values for key variables (e.g. average consultation length) from NZ studies with a sufficiently large sample size;^{10,11}
- In-depth case studies of 9 primary care practices—to obtain a more in-depth understanding of the way tasks are allocated between nurses and doctors in different types of primary care centres (rural/urban, small/large, high nurse users/low nurse users, low cost access/normal capitation), and to provide data to replicate the financial environment for NZ primary care practices.

The case studies involved face to face interviews with GP, nursing and practice management staff; collection of practice revenue and expenses data; collation of population and service utilisation information; collection by GPs and nurses of work diaries over a period of a week; and collection of patient co-payment data. Case studies were completed in August to November 2009. Diaries detailing a total of 1,826 GP and nurse consultations were completed.

Results

Figure 1 shows the percentage of general consults (i.e. excluding immunisations and scripts) undertaken by nurses. The variation in practice is considerable, and is consistent with the interview data showing that nurses have considerably greater clinical autonomy in some practices compared to others.

We developed a simplified customisable model to replicate the impact of NZ wage rates, capitation rates, co-payment charges, and other fee-for-service income on practice profitability under different allocations of the various types of consultations between practice nurses and GPs.

The financial impact for a practice owner of substituting more nursing time for GP time is highly dependent on four variables, as shown in Table 1 below.

Figure 1. Percentage of general consults (i.e. excluding immunisations and scripts) undertaken by nurses

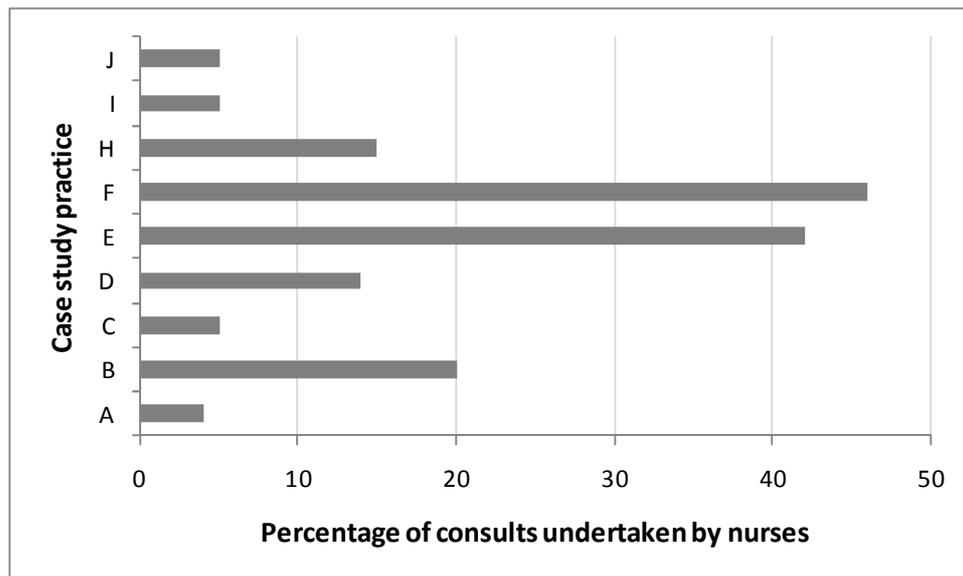


Table 1 Key variables impacting on the cost-effectiveness of clinical task substitution in NZ practices

Variable	Notes on impact
Nurse cost per clinical minute relative to GP cost per clinical minute	<p>Cost per clinical minute is driven primarily by salary/hourly rates of pay, but is also a function of the amount of paid non-clinical time, including annual leave, CME leave, and protected non-clinical time. This last variable had a significant impact in the practices that used the DHB Multi-Employer Contract Agreement for salaried medical staff—pushing the cost per clinical minute up by around 30%.</p> <p>The lower the nurse cost per minute is as a percentage of the GP cost per minute, the more likely task substitution will be cost-effective (all other things being equal). In our case studies the nurse cost per minute ranged from 21% to 44% of the GP cost per minute.</p>
Nurse consult duration relative to GP consult duration	<p>The literature review identified that nurse consultations are generally longer than GP consultations for similar clinical issues—although in our case studies the median consultation length for both GPs and nurses from the diaries was 15 minutes.</p> <p>The longer nurse consultations are, relative to GP consultations for the same episode, the less cost-effective task delegation from GPs to nurses becomes.</p>
Nurse consult fee for service revenue relative to GP consult fee for service revenue	<p>Fee for service revenue includes both patient co-payments and third party payments. ACC, for instance pays less for a nurse consultation than a GP consultation, even if the same clinical service is provided. Immunisations are remunerated at the same level regardless of who provides the service. Most of our case study practices charged patients considerably more for a GP consultation than a nurse consultation. Lower nurse co-payments make task substitution less cost-effective.</p>
The percentage of nurse consults requiring supplementary GP time	<p>Some primary care consultations, if undertaken primarily by a nurse, will also require GP input—for instance, to confirm the diagnosis and treatment plan, to sign a proposed prescription or to order tests. The more often a nursing consultation also requires GP time, the less cost-effective task substitution will be.</p>

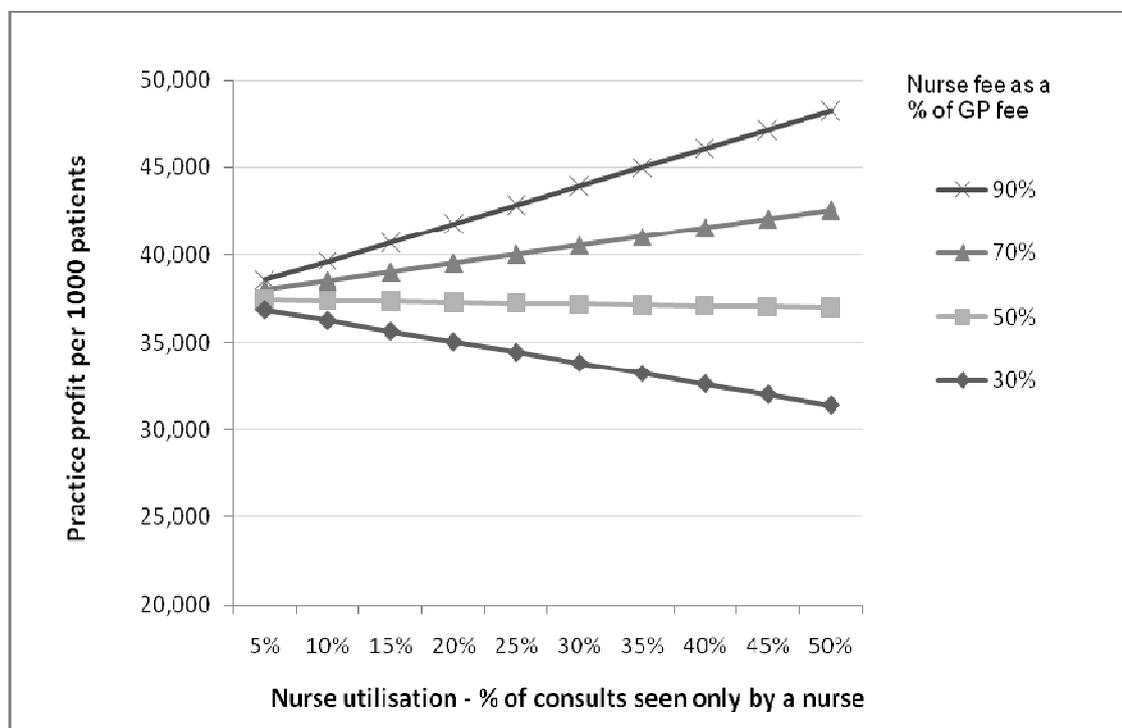
The aggregate impact of the four variables differed considerably between case studies. For some (particularly very low cost access practices), maximal task substitution was always cost-effective. These practices tended to have low levels of fee-for-service revenue and often charged the same or similar amounts whether a patient saw the GP or the nurse.

For more traditional practices the cost-effectiveness of task substitution was more finely balanced. Nurse provision of immunisation and chronic care management services was usually cost-effective, whereas nurse provision of ACC consults usually was not.

The bulk of primary care consultations are undifferentiated ‘general’ consultations; the key variable determining cost-effectiveness for general consultations tended to be nurse co-payment fees as a percentage of GP co-payment fees. Figure 2 shows the projected profitability for case study practice “A”, a non-low cost access practice, under different nurse fee rates (as a % of GP fee) and different proportions of consultations seen by nurses.

The full financial model, which is customisable for different practice configurations, can be downloaded from the NZ Ministry of Health website at <http://www.moh.govt.nz/moh.nsf/indexmh/practise-nurse-cost-benefit-analysis>

Figure 2. Practice “A” projected profit per thousand population with different percentages of consultations seen by a nurse and at different copayment fee levels



Discussion

It is clear that practice nurses can, and in some practices in NZ do, provide a broad set of primary care services, including undifferentiated general consultations. Robust data from practices E & F show that nurses there are providing in the order of 40–50% of the total clinical consultations. We have no information from this study on the relative quality of nurse versus GP consultations, but the most recent Cochrane review on this subject indicates equivalent or superior outcomes for nurse consults in primary care settings.¹²

The financial impact of clinical task substitution is complex and will vary by practice. For some practices, increasing the proportion of nurse consults and reducing GP consults, without changing other parameters, would result in significantly improved profitability. For others, the opposite applies.

One of the variables most amenable to practice control is the ratio between nurse consult revenue and GP consult revenue. That is, practices can increase their co-payment fees for nurse consults (and/or reduce their fees for GP consults), in order to improve the cost-effectiveness of task substitution. In most non-very low cost access practices, nurse fees need to be at 50% or more of GP fees for substitution to be cost-effective.

Another variable that might impact in a different financial context, but that will seldom be an issue in NZ (because budget holding is uncommon), is the average cost of referred services/hospital services following a practice nurse consultation versus a GP consultation.

Modelling indicates that task substitution will almost always be financially advantageous in very low cost access practices.

This study suffered from a number of limitations, including:

- Consultation diaries did not differentiate older adults—who might be expected to have different consult duration profiles.
- Limited sample—replication with a larger group of practices would improve the ability to generalise findings.
- Further activity differentiation—the current model bundles minor surgery, maternity, occupational health, and other activities into a residual ‘other’ category—ability to differentiate these based on duration, fee, etc would improve modelling accuracy.
- Assumed skill homogeneity—the model ignores differences in individual clinical competencies—in practice, task substitution is more likely to be feasible where nurses are more experienced and have enhanced training.

Funding policy implications—Service funding arrangements that involve the same remuneration for the same task regardless of who provides the service are most likely to result in increased use of nurse time. This effect can be seen in:

- Immunisations, which are paid at a constant rate regardless of provider, and which are mainly provided by practice nurses.
- Careplus/chronic condition management episodes of care, which (depending on the PHO) are often paid at a fixed price per visit and are often provided by practice nurses.
- Telephone calls/recalls/lab results calls, which are usually not specifically remunerated on a fee-for-service basis, and which are often provided by practice nurses.
- Acute/on-the-day face-to-face consults in very low cost access practices, where the average per episode fee is low, are likely to be provided primarily by practice nurses with support from GPs as required.

Therefore policies to increase utilisation of nurses in a for-profit environment could include a same-fee-regardless-of-provider policy. The same effect could be achieved by a no fee (capitation only) policy. Policies that increase task substitution will free up general practitioners to enrol more patients, and may be one way of addressing ‘closed books’ as a barrier to accessing primary care.

Implications for practice owners—Practice owners will face many constraints, including availability and skills of the local workforce, and the difficulty in changing long established business processes. Nonetheless, the opportunity exists for practices to consider new ways of providing clinical services by making best use of practice nursing skills. In many cases, an appropriate co-payment regime will make transfer of a wide range of clinical tasks from GPs to nurses cost-effective.

Practices may need to work with patients to make such a shift acceptable—to reduce the expectation that patients may have that they will always see the doctor, and to reduce the expectation of a large fee differential between a nurse and a GP visit.¹³ Clearly some NZ practices have already achieved this shift in expectations.

Conclusion

The pressure of population ageing, combined with the constrained fiscal environment, and finite supply of GPs, makes moving to models of care that provide better use of our medical workforce (such as through clinical task substitution) an attractive proposition for funders and patients. Our findings suggest that supporting nurses to expand their role can also, with careful attention to the relevant variables, be financially beneficial for practice owners.

Competing interests: None.

Author information: Martin Hefford, Director, Sapere Research Group, Wellington; Tom Love, Principal, Sapere Research Group, Wellington; Jacqueline Cumming, Director, Health Services Research Centre, School of Government, Victoria University of Wellington; Mary Finlayson, Associate Professor, School of Nursing,

University of Auckland; Antony Raymont, Senior Research Fellow, Health Services Research Centre, School of Government, Victoria University of Wellington

Acknowledgements: This study was funded by the Ministry of Health. We also acknowledge and thank the GPs and nurses who agreed to keep daily diaries and hence made the study possible.

Correspondence: Martin Hefford, Sapere Research Group, PO Box 587, Wellington 6140, New Zealand. Fax +64 (0)4 9157596; email: mhefford@srghealth.com

References:

1. The New Zealand medical workforce in 2009: Medical Council of New Zealand, 2010.
2. Gray B. The workforce shortage disadvantages those in greatest need. *Journal of Primary Health Care* 2009;1(2):99–100.
3. Frette J, Pande M. Forecasting GP Workforce Capacity: Royal New Zealand College of General Practitioners, 2006.
4. Cumming J, Gribben B. Evaluation of the Primary Health Care Strategy: Practice Data Analysis 2001–2005: Health Services Research Centre, 2007.
5. King A. The New Zealand Primary Health Care Strategy: Ministry of Health, 2001.
6. Finlayson M, Sheridan N, Cumming J. Nursing developments in primary health care 2001–2007. Wellington: Victoria University of Wellington 2009:1–95.
7. Gauld R. The Unintended Consequences of New Zealand's Primary Health Care Reforms, 2008:93–115.
8. Sibbald B, Laurant M, Reeves D. Advanced nurse roles in UK primary care. *eMJA* 2006;185(1):10–12.
9. Wilson A, Pearson D, Hassey A. Barriers to developing the nurse practitioner role in primary care—the GP perspective. *Family Practice* 2002;19(6).
10. The IPAC 2006 General Practice Business Study; Structure, Organisation and Finances of Representative General Practices in 2006: IPAC, 2006.
11. Sustainable Costing of General Practice Medical & Accident Services: IPA Council of New Zealand, 2002.
12. Laurant M, Reeves D, Hermans R, et al. Substitution of doctors by nurses in primary care – art. no. CD001271.pub2. *Cochrane Database of Systematic Reviews* 2005(2):36.
13. Redsell S, Stokes T, Jackson C, et al. Patients' accounts of the differences in nurses' and general practitioners' roles in primary care. *Journal of Advanced Nursing* 2007;57(2):172–180.