



# The costs, barriers and enablers of providing PGY2 placements in general practice in Aotearoa New Zealand: a mixed-methods study

Carol Atmore<sup>A,B,\*</sup> , Trudy Sullivan<sup>D</sup>, Jessica Millar<sup>A</sup>, Aisha Paulose<sup>A</sup>, Andy Shute<sup>A</sup>, Dot Brown<sup>C</sup> and Tim Stokes<sup>B</sup> 

For full list of author affiliations and declarations see end of paper

## \*Correspondence to:

Carol Atmore  
WellSouth Primary Health Network,  
Level 2, 333 Princes Street, Dunedin 9016,  
New Zealand  
Email: [Carol.Atmore@wellsouth.org.nz](mailto:Carol.Atmore@wellsouth.org.nz)

## Handling Editor:

Felicity Goodyear-Smith

Received: 17 September 2023

Accepted: 8 January 2024

Published: 8 February 2024

## Cite this:

Atmore C et al.  
*Journal of Primary Health Care* 2024  
doi:[10.1071/HC23116](https://doi.org/10.1071/HC23116)

© 2024 The Author(s) (or their employer(s)). Published by CSIRO Publishing on behalf of The Royal New Zealand College of General Practitioners.

This is an open access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License ([CC BY-NC-ND](https://creativecommons.org/licenses/by-nc-nd/4.0/))

OPEN ACCESS

## ABSTRACT

**Introduction.** Few mandatory community-based attachments for postgraduate year two doctors (PGY2s) in Aotearoa New Zealand are hosted in general practices, due to space, time and remuneration barriers. **Aim.** This study aimed to explore the costs, barriers and enablers to general practices of hosting PGY2s. **Methods.** A cost analysis for four general practices beginning to host PGY2s was undertaken, including time spent supervising and supporting PGY2s, revenue impact including subsidies and cost of providing clinical space. Interviews with these practices and seven experienced PGY2 host practices were conducted and analysed thematically. **Results.** The estimated mean cost of hosting PGY2s excluding room cost was NZ\$4907 per 13-week placement (range \$890–\$9183), increasing to \$13 727 per placement (range \$5750–\$24 715) when room rental was included. Four themes were identified: working within a small business model; a new learning environment for PGY2s; providing positive experiences for the PGY2s; the relationship between practices and district hospitals that employed the PGY2s, including job sizing. **Discussion.** Tension exists between the small business model of general practice and providing positive experiences for PGY2s in a new learning environment. Guidance and support structures for PGY2 hosting should be developed nationally, and communication and cooperation between practices and employing hospitals needs improvement. Out-of-hours work should be included in community-based attachments so PGY2s' remuneration is consistent. General practice teams are willing to be part of creating a sustainable workforce. However, the time taken to host and costs of providing training in primary care are barriers. There is urgent need to increase funding to general practices for hosting PGY2s.

**Keywords:** community-based attachment, cost analysis, general practice, mixed-methods, postgraduate year 2, primary care, qualitative, quantitative.

## Introduction

There is an impending general practitioner (GP) workforce shortage across rural and urban Aotearoa New Zealand (NZ).<sup>1</sup> Over half of NZ's current GPs are planning to retire in the next 10 years. While NZ needs just over one-third (37%) of graduating doctors to enter general practice to maintain the current GP workforce, only one-fifth of graduating doctors (21%) are choosing general practice as their career preference.<sup>2,3</sup>

All graduating doctors in NZ must participate in prevocational medical training for 2 years before gaining full medical council registration. Providing prevocational doctors with a positive general practice experience promotes general practice career choices.<sup>4–6</sup> A 13-week community-based attachment (CBA) must be undertaken, usually by post-graduate year 2 junior doctors (PGY2s), and is funded by their employing district hospital.<sup>7</sup> In the CBAs, PGY2s are exposed to a broad range of clinical conditions, learn about primary and community health care and are more likely to experience end-to-end patient care.<sup>4,5,8,9</sup>

## WHAT GAP THIS FILLS

**What is already known:** Community-based attachments (CBAs) are mandatory in NZ for junior doctors in their first 2 years of study. Some research indicates that CBAs are a positive experience for the practice and the junior doctors.

**What this study adds:** An estimated average cost for hosting PGY2s in general practice was \$NZ4907 (range \$890–\$9183) per placement before consideration of space costs, over and above current funding provided by Health New Zealand |Te Whatu Ora (TWO) Health Workforce Directorate. The small business model of general practice is in tension with providing a positive experience for the PGY2s in a new learning environment, and better communication and cooperation between practices and TWO employing hospitals are needed.

Despite the benefits for PGY2s and the potential positive impact on general practice career choices, it has been difficult to recruit general practices as CBA placement sites. To date, most CBAs occur in other non-GP community and outpatient settings. Barriers to CBA uptake in general practices include the lack of physical space to house PGY2s, workforce pressures and the uncompensated time required to provide training and supervision. While teaching and supervising medical students and GP registrars in existing programmes is financially remunerated, prior to 2023 general practices received no remuneration for hosting PGY2s in CBAs.

To our knowledge, no study has examined the cost to general practices of providing CBAs in NZ. To encourage general practices in Otago and Southland to start hosting PGY2s for CBAs, WellSouth Primary Health Network funded four general practices to host PGY2s in 2022 (ie four placements/quarters of 13 weeks) and participate in the research project reported on here. This study aimed to estimate the costs associated with hosting PGY2 junior doctors and to investigate the experiences of NZ GPs providing CBAs.

## Methods

### Design, study setting and sampling

For this mixed-methods study, we sought expressions of interest from general practices in Otago/Southland to: (i) host a PGY2 each quarter in 2022; (ii) record the time and financial costs associated with hosting the PGY2s over the term of their placement and (iii) be interviewed about their experience. WellSouth Primary Health Network funded each practice NZ\$13 000 for hosting PGY2s for four quarters (ie \$3250 per PGY2 per quarter) and provided ongoing medical educator training and support to GP supervisors.

In addition, general practices across NZ that already hosted PGY2s were identified through the Primary Care Clinical Leaders Forum of General Practice New Zealand,<sup>10</sup> and a purposive sample<sup>11</sup> of practice staff (geographic, rural and urban, small and large practice representation) were invited to be interviewed about their PGY2 hosting experiences. The Geographical Classification of Health<sup>12</sup> was used to define practice rural/urban status.

## Data collection

### Quantitative data

Practice staff from the four Otago/Southland practices recorded in quarters 2 and 3 how much time GPs, nurses and administrators spent supervising and supporting PGY2s. Times were entered into a spreadsheet template categorised into GP, nurse and administration time per week, with a drop-down menu of 30-min time slots beginning at 0–30 through to 120–150 min. Practice managers also documented the number of consultations provided by the PGY2 each week and the change in consultations (if any) provided by the supervising GP. Practices recorded their hourly charge out rate for a clinical room.

### Qualitative data

Interviews with established CBA placement general practices across NZ sought to understand the experience of hosting PGY2s from the GP supervisor and practice perspective; and to identify key barriers and enablers to hosting PGY2 doctors. Group interviews with each of the four Otago/Southland practices were also conducted near the beginning and 6 months into their first year of hosting PGY2s to understand their hosting experience. Semi-structured interviews were between 30 and 60 min long and were conducted and recorded via Microsoft Teams or Zoom. Supplementary File S1 shows the topic guide. The interviewer (DB) made field notes after each interview.

## Cost analysis

A cost analysis was undertaken (Fig. 1) using data from quarters 2 and 3 of 2022. To estimate the cost per placement of supervising and supporting a PGY2, the time spent by the GP, nurses and administrators outside of clinical consultation time was calculated for each practice and averaged across the two quarters. Time spent was calculated using the midpoint of each time category (eg if a GP selected 120–150 min, the midpoint of 135 min was used). The total time was multiplied by the associated hourly rates paid for each workforce using commonly used industry sources: the Medical Assurance Society's median hourly rate for employed GPs (\$103 per hour)<sup>13</sup> and the mean collective agreement rates for primary care nurses<sup>14</sup> (\$30.83) and administrators (\$22.10).<sup>14</sup> These rates did not include associated costs of employment, such as annual

leave and Kiwisaver. The costs for each category were summed across the practices and the means taken.

The only direct practice cost included was for software. A PGY2 required a patient management system licence to use during their placement. The cost of a common software licence (MedTech Evolution)<sup>15</sup> was applied, at a cost of \$555 per licence for the 13 weeks.

To estimate the cost associated with a change in the number of consultations, the difference between the number of consultations provided by the GP and the PGY2 (*b* + *c* in Fig. 1) was subtracted from the baseline number of consultations provided by the GP prior to the PGY2 placement (*a* in Fig. 1) and multiplied by the average revenue per consultation. As consultations for children under 14 were free and part charges for adults were up to \$50, an average revenue of \$20 per consultation was used. The change in consultation costs were summed across the practices and the mean taken.

To calculate the opportunity cost of providing clinical space for PGY2s, the number of hours worked by PGY2s

per quarter (8 h per day × 4.5 days per week × 13 weeks) was multiplied by the average hourly charge-out rate per room for that practice. One practice did not rent rooms externally. The mean charge-out rate was calculated using each practice’s hourly charge-out rates: \$10 (practice 1), \$0 (practice 2), \$15 (practice 3), \$50 (practice 4).

As well as producing a range of cost estimates including and excluding room rental costs, a conservative cost estimate was calculated using half of the mean GP supervision costs, double the mean revenue generated from the extra patients seen by the PGY2 and the mean room rental costs.

Subsequent to the study period, Health New Zealand | Te Whatu Ora Health Workforce Directorate (HWD) implemented a \$3600 per placement subsidy for general practices hosting PGY2s in 2023.<sup>16</sup> This was very similar to the funding provided by WellSouth for the study period. This funding is now ongoing, and so was included as revenue for the purposes of the cost analysis. All costs were calculated using NZ dollars.

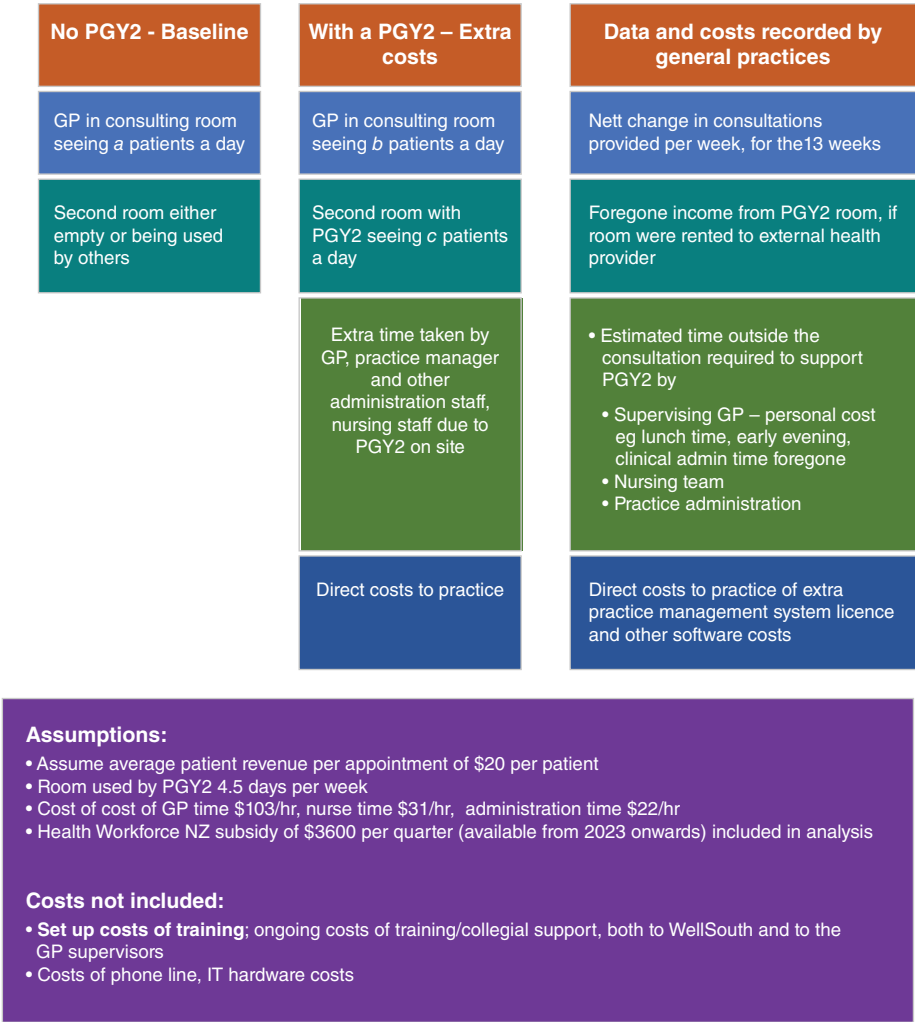


Fig. 1. Cost analysis for PGY2 community based attachments.

GP, general practitioner; hr, hour; IT information technology; PGY2, post-graduate year 2 doctor

## Qualitative data analysis

All interviews were transcribed and combined with the field notes and thematically analysed.<sup>17</sup> Themes and sub-themes were developed by JM. Initially these used the interview topic guide main headings and were modified as coding progressed. Two other authors (TS and CA) reviewed several transcripts to verify the appropriateness of the themes developed.

Ethics approval was obtained from the University of Otago's Human Ethics Committee (D22/098).

## Results

The practice demographics of the four participating Otago/Southland general practices and the seven practices from across NZ are described in Table 1.

### Costs associated with hosting PGY2s

Three practices provided data for two quarters, and one practice provided data for one quarter only as the assigned PGY2 was unavailable. The mean hours spent by each practice supervising and supporting PGY2s together with the associated costs are presented in Table 2. When averaged over the four practices, GPs spent the most time and cost the most (85 h, \$8797), followed by administrators (17 h, \$369) and nurses (4 h, \$136). Three out of the four practices

experienced a gain in total consultations resulting from the PGY2 placement (Table 2). The mean change in consultations of 68 per placement (range – 80 – 171) equated to a mean of \$1350 in additional revenue at an assumed average revenue of \$20 per consultation. The mean cost per placement, including the PGY2 HWD subsidy of \$3600 but excluding room charge-out rates, ranged from \$890 to \$9183 across the four practices with an overall mean cost of \$4907 per PGY2 placement.

The impact of including the cost to a general practice of providing the PGY2 with a consultation room is presented in Table 3. While only three practices charged out rooms, the mean cost (including \$0 for practice 2) of hosting a PGY2 rose to \$13 727 (range \$5750–\$24 715) per placement when space for the PGY2 was accounted for.

When the mean cost of GP supervision is halved, the revenue from extra patients seen by the PGY2 is doubled and the mean room charge-out rate of \$8820 is used, the mean cost of hosting a PGY2 per placement is \$7179 (range \$2885–\$11 001).

### Practice interviews

Nine participants from the study practices in Otago/Southland (two female and three male GPs, one female GP/practice manager and three female practice managers) were interviewed. Four interviews with GPs and practice managers at each practice were conducted at the beginning of PGY2 placements, with follow-up interviews for three of

**Table 1.** Profiles of participating general practices.

Practice	Designation <sup>A</sup>	Enrolled population <sup>B</sup>	GP FTE	Māori % of enrolled population	RNZCGP accreditation status
Otago/Southland practices					
Practice 1	Urban U2	1700	1.4	45%	Foundation
Practice 2	Urban U1	10 500	4.8	9%	Cornerstone
Practice 3	Rural R2	2300	0.9	7%	Foundation
Practice 4	Urban U1	15 000	4.7	3%	Cornerstone
Experienced PGY2 host practices					
				Years hosting PGY2s	Notes
NZ 1	Rural R2	4900	3.6	5	
NZ 2	Rural R3	700	1.0	3	Joint placement half time with NZ 7
NZ 3	Rural R1	6200	5.0		Joint placement half time with NZ 6
NZ 4	Urban U1	8500			Group of 7 clinics of whom 5 have supervisors for hosting
NZ 5	Urban U1	6000		7	Group of 3 practices
NZ 6	Urban U1	5000	4	3	Group of 6 practices
NZ 7	Rural R1	21 500	12	9	Group of 9 practices over 100 km

<sup>A</sup>Urban rural classification, using The Geographical Classification of Health.<sup>12</sup>

<sup>B</sup>Practice population rounded to nearest 50 patients; GP, general practitioner; FTE, full-time equivalent; RNZCGP, Royal New Zealand College of General Practitioners. PGY2, Post graduate year 2 doctors; NZ, New Zealand.

**Table 2.** Total and mean nett costs to practices of supervising and supporting a PGY2 per 13-week placement, excluding room rental costs.

		Practice 1	Practice 2	Practice 3 <sup>A</sup>	Practice 4	Mean hours, costs, consultations, revenue and net cost per placement
<b>(a) Practice supervision and support cost<sup>B</sup></b>						
<b>GP</b>	Hours	60	115	93	74	85 h
	Cost	\$6129	\$11 845	\$9553	\$7661	\$8797
<b>Nurse</b>	Hours	3	10	2	3	5 h
	Cost	\$91	\$308	\$69	\$78	\$136
<b>Administrator</b>	Hours	10	52	3	2	17 h
	Cost	\$215	\$1155	\$64	\$41	\$369
Sub-total		\$6435	\$13 308	\$9686	<b>\$7780</b>	<b>\$9302</b>
<b>(b) Cost of computer licence<sup>C</sup></b>		\$555	\$555	\$555	<b>\$555</b>	<b>\$555</b>
<b>(c) Change in revenue<sup>D</sup> from extra patients seen with PGY2</b>						
GP consultations		-139	-337	-301	-77	-213.5
PGY2 consultations		264	391	221	248	281
Change in consultations		125	54	-80	171	67.5
Sub-total revenue (-) and cost (+)		-\$2500	-\$1080	\$1600	<b>-\$3420</b>	<b>-\$1350</b>
<b>(d) New PGY2 HWD subsidy</b>		-\$3600	-\$3600	-\$3600	<b>-\$3600</b>	<b>-\$3600</b>
<b>Net cost to general practice per placement (a + b + c + d)</b>		<b>\$890</b>	<b>\$9183</b>	<b>\$8241</b>	<b>\$1315</b>	<b>\$4907</b>

All figures rounded to the nearest hour and dollar.

PGY2, postgraduate year 2 doctor; GP, general practitioner; Admin, Administration team. Hourly costs used \$103.00, \$30.83 and \$22.10 per hour for GP, nurse and administrator, respectively.

<sup>A</sup>Practice 3 provided data for one placement only.

<sup>B</sup>Practice supervision outside of consultations.

<sup>C</sup>Cost of common computer licence fee.

<sup>D</sup>Average revenue of \$20 per patient.

**Table 3.** Mean nett cost of a PGY2 per 13-week placement including and excluding room rental costs plus a conservative cost estimate.

	Practice 1	Practice 2	Practice 3 <sup>A</sup>	Practice 4	Mean cost
Mean nett cost per placement without room rental cost	\$890	\$9183	\$8241	\$1315	\$4907
Cost of PGY2 room if rented	\$4860	N/A	\$7020	\$23 400	\$8820 <sup>B</sup>
Mean nett cost per placement including room rental cost	\$5750	\$9183 <sup>B</sup>	\$15 261	\$24 715	\$13 727 <sup>B</sup>
Mean nett cost per placement with half of GP supervision costs, double revenue and mean room rental costs	\$4146	\$11 001	\$10 685	\$2885	\$7179

PGY2, postgraduate year 2 doctor.

<sup>A</sup>Practice 3 provided data for one placement only.

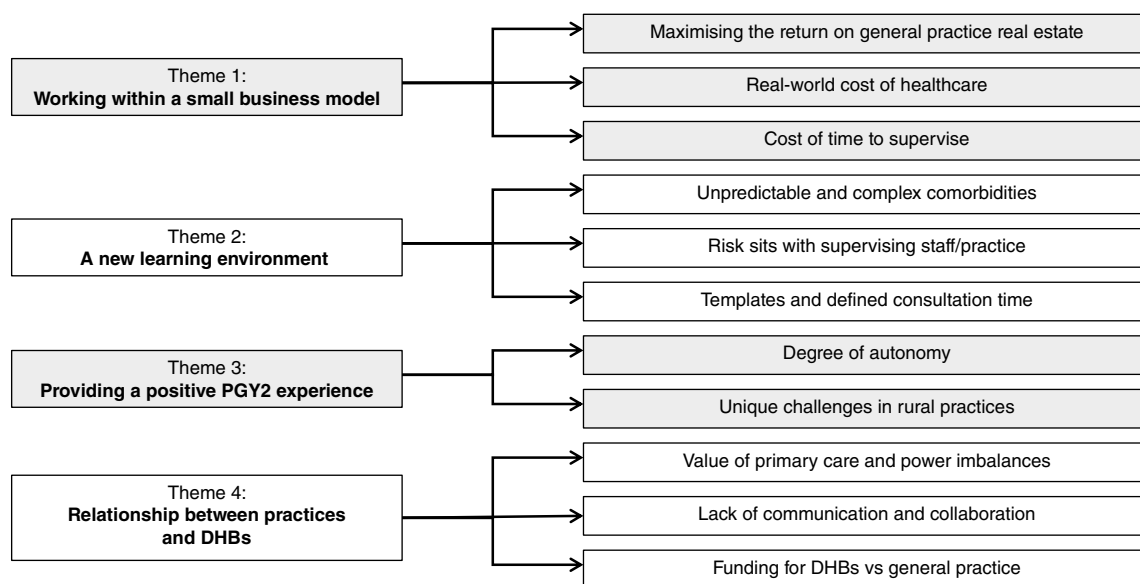
<sup>B</sup>Includes room rental cost of \$0 for practice 2.

the four practices. Seven interviews were also conducted with GPs from across NZ who were established PGY2 supervisors (four female and four male). Of these, one male and two female GPs were also practice managers. This study was conducted during health care reforms. We refer to district health boards (DHBs), with individual health boards responsible for ensuring the provision of health care services to 20 geographical districts, including district hospitals. From 1 July 2022, DHBs were replaced by a single national health organisation, Health New Zealand/Te Whatu Ora (TWO).

Four themes were identified (Fig. 2): working within in a small business model, general practice as a new learning environment, a positive PGY2 experience, and the relationship between general practices and DHBs. Illustrative participant quotes are presented.

### Theme 1: working within a small business model

Due to pressures on clinical space and financial constraints, many practices were forced to prioritise the space required



DHB, district health board; PGY2, postgraduate year 2.

**Fig. 2.** Four themes identified by interviews with general practice teams across New Zealand.

to host PGY2s. This was often driven by the impact of different types of employees and trainees on practice income. Overall, ‘space is money’ (P1), general practice is a business, and as one interviewee put it, ‘if the dollars don’t stack up, I’m not going to do it’ (P2). Several practices already hosted medical students, trainee interns and/or registrars and some also trained nurses and pharmacists towards further qualifications. They noted that medical students did not take up extra GP time or space so were considered cost neutral to the practice, and registrars generated an income for the practice which was a financial benefit. PGY2s on the other hand were perceived as an overall cost because of the supervision time required and limited revenue generation by the PGY2.

The PGY2s’ lack of real-world experience regarding the financial cost of health care was consistently recounted, stemming from lack of experience in primary care. PGY2s needed to learn that every procedure and intervention is costed to someone:

Every dressing we use either the practice covers it, or it gets put onto the patient. (P3).

While encouraging PGY2s to view medicine from a primary care perspective was important, this required considerable supervision. Supervising involved maturing a PGY2 in how the practice worked, teaching medicine in a community environment and modelling bedside manner and real-world ethics. While PGY2s had an invaluable learning experience because of such close supervision, concern was expressed about the detrimental impact on practice finances.

## Theme 2: a new learning environment

The clinical environment of general practice was seen as unfamiliar and uncertain for PGY2s compared with previous hospital experience. Patients could present with anything, and consultations may cover social, emotional, mental or financial issues in addition to physical symptoms.

It is difficult to articulate the complexity of what we do and how uniquely challenging it is and there is still a perception, I’m sorry to say, amongst a lot of our colleagues that it is just coughs and colds and minor illnesses but it’s not, it’s incredibly complex, biopsychosocial, integrative care. (P3)

General practice was seen as a somewhat riskier environment to practise medicine in, compared with hospitals. Obtaining clinical investigations (such as blood tests and X-rays) and second opinions may not be immediately possible in primary care. This was particularly an issue for rural practices, but all practices required the ability to manage uncertainty that was not a feature of hospital care. The PGY2s were seen to benefit from being fully immersed in primary care. For example, in hospital settings, PGY2s often felt they had a predominantly clerking role, where they arrange patient care and referrals. In primary practice, however, they were expected to operate autonomously, with supervision. Interviewees reported their PGY2s feeling more empowered and experienced increased confidence in diagnosing and prescribing after their primary care experience. However, the responsibility for the PGY2s’ clinical decisions as they navigated managing this uncertainty

and learning transition fell on the supervising GP and/or practice.

Another difference for PGY2s was the structured consultation templates within general practices. In the early stages of managing new PGY2s in practice, aligning the GP template with a less-structured approach for PGY2s, in addition to setting aside time to supervise, took some manoeuvring and required substantial time and experience.

### Theme 3: providing a positive PGY2 experience

All participants emphasised that they wanted PGY2s to have a positive experience of general practice:

We want to showcase them without frightening them. (P4)

Balancing supervision versus autonomy was required for each PGY2, to be safe for patients as well as empowering for PGY2s. The expectation was that GPs supervised most or all the PGY2s' patients in the early phase of placements, and then adapted templates based on the competence and confidence of the PGY2. Experience and trust in the PGY2 were the drivers for increased autonomy, however, safety for the patient and the clinical decisions made about their care were at the core of this process. Adapting templates on an individual basis was challenging. One doctor described how organising their schedule to align with PGY2 needs, supervising and rostering staff and fine tuning, was a time-consuming process that required careful assessment for the first few weeks (at least) of placement.

Every three months it's a new puzzle. It's a different approach, a different personality, different view on medicine, or on life. (P5)

The expectations of medical students, trainee interns and registrars were well-established, but the role of PGY2s was unclear in practices beginning CBAs. While experienced PGY2 teaching practices had built a clear process, there were no guidelines for practices beginning to host PGY2s to follow.

Building a positive experience for PGY2s had an added challenge for rural practices. DHBs were less willing to take responsibility for finding accommodation for PGY2s in rural practices, thus the onus fell on the practice. Solutions ranged from informal arrangements with local people to use spare accommodation for placements, to buying and converting a house into a multi-bedroomed lodge for all health professional undergraduates and new graduates. GPs in rural practices also provided pastoral support and had more involvement in PGY2s' overall wellbeing:

The whole process is more than GP clinical and teaching. GPs also provide accommodation and pastoral care as they [the PGY2s] are away from home. (P6)

### Theme 4: relationship between practices and DHBs

All practices recounted the strained relationship between the practice staff and the DHBs. One interviewee put it succinctly:

The DHB is a barrier to success. (P6)

Participants considered that a career in primary care is viewed by DHB staff as an easy option. It was felt that DHB staff assumed the PGY2s would provide extra (and free) manpower and practices should be grateful.

A lack of communication from the registered medical officer (RMO) units at DHBs who oversaw PGY2 placements further added to frustration within the practices. Many practices were not given information about the PGY2 prior to their arrival which hampered much of the preparation for induction. There was little understanding of the numerous and cumbersome administration processes and logins (eg ACC, Practice Management Systems, HealthOne, etc) to arrange at the beginning of placement. When placement start dates fell during school holidays, fewer GPs and practice staff were available, and this meant that induction programmes were fragmented or inadequate.

The lack of an ongoing relationship or even knowledge of a contact person, between the RMO units and practices throughout placements was most concerning. This was particularly frustrating for practices when RMO units made unilateral decisions granting PGY2s annual leave with little or no consultation with the practices. There was no formal process in which the DHBs were required to inform practices of these decisions. Some practices experienced PGY2s returning to their employing hospital to provide cover for a shortage of junior doctors during the placement. This was not expected, or at times communicated, to the practices.

The difference in funding and salary between the DHBs and practices was a source of contention. PGY2s received a lower salary by choosing a general practice placement. An equivalent doctor in a hospital setting had the capacity to earn more on after hours shifts and weekend work. As GPs provide out-of-hours care, it was suggested that the PGY2 CBA placements could be set at a higher salary band and include general practice out-of-hours experience.

Practices felt that they were not adequately funded for their time and commitment to training PGY2s. In some cases, the funding covered the start-up costs but did not cover ongoing costs and expenses. Practices were frequently left out-of-pocket for training PGY2s. Adequate funding for practices was vital for the continuation of the PGY2 initiative. One interviewee put it succinctly by saying 'my devotion to the project would dip and I would have to look at other options' (P2) if current funding issues were not addressed.

## Differences between Otago/Southland practices and wider New Zealand practices

Experienced practices had developed efficient processes and had standardised systems in place for working with PGY2s. All staff knew the role PGY2s performed, and their own roles to facilitate positive PGY2 experiences. Indeed, the wider NZ practices described their reliance on having PGY2s in practice: '[the] worst fear is that they [the DHB] don't have anyone now' or the DHB wish to 'give you guys a break [from hosting PGY2s]' (P5). In contrast, Otago and Southland practices who were new to hosting PGY2s lacked clarity regarding the optimal time to begin reducing supervision while incrementally increasing the PGY2s' autonomy. They expressed the overwhelming amount of work required to adequately supervise PGY2s, 'I think that the DHB thinks they have taken a huge chunk of workload off us and made our lives lighter. I don't think they realise how much extra work it actually is' (P2). Some were reluctant to participate in hosting again.

## Discussion

This study examined the costs, barriers and enablers of hosting PGY2s in primary care. Using data from four general practices, the mean cost to practices for hosting a PGY2 was \$4907 per placement (range \$890–\$9183), including the HWD subsidy and excluding the opportunity cost of providing clinical space for the PGY2. When a mean room charge-out rate was included, the mean cost increased to \$13 727 per placement (range \$5750–\$24 714). Interviews with GPs and practice managers from across NZ identified the tension between the small business model of general practice and providing a positive experience for the PGY2s in a new learning environment, and in the relationship between practices and DHBs. We also found that primary care placements in the early postgraduate years increased PGY2s' confidence in their clinical skills and judgement, and their understanding of general practice. However, the level of GP supervision and practice input required for PGY2s to achieve these positive benefits was high, and current funding leaves practices 'in the red' for doing so.

While the cost of space is only a true additional cost if the room would otherwise be rented out, interview participants noted that available space was a barrier to hosting PGY2s. Comments from the experienced host practices suggested that there may be efficiencies that come with experience. Taking a conservative approach to estimating the costs of hosting PGY2s in more experienced settings, where the mean additional time required by GPs to supervise PGY2s was halved, the revenue generated was twice that indicated in this study, and the mean cost of providing a clinical room for a PGY2 was used, the mean cost to general practices for each 13-week placement would be \$7179 (range \$2885–\$11 001).

A strength of this study is that we were able to interview GPs and practice managers from across NZ. While this study collected costing data from a cross-section of practices across Otago and Southland, only four practices were involved, and they were new to hosting PGY2s. Our cost analysis was conservative, as it did not differentiate practice managers from other administrators and only used an hourly rate rather than full cost of employment. It did not include WellSouth medical educator costs to support new GP supervisors or practice costs such as IT hardware. Our approach to estimating the cost of space was pragmatic using a range of room charge-out rates. It would be useful to include more general practices with varying lengths of experience hosting PGY2s in a larger costing study to improve the generalisability of our costing findings.

The hidden curriculum displayed in hospital settings of undermining general practice, and the associated academic, social or cultural messaging, begins early in medical school.<sup>6,18</sup> Supervising GPs in the present study felt undervalued by their hospital colleagues, which was exacerbated by the lack of communication and collaboration between practices and the RMO units. The need for clear timely communication and understanding between the hospitals where PGY2s are employed and PGY2 supervising practices was identified.

Great experiences in general practice increase junior doctors choosing general practice careers, and the reverse is true.<sup>6</sup> Providing the right level of autonomy and oversight tailored to each PGY2 was important in providing positive experiences. We identified that practices who were new to hosting PGY2s were less confident, and processes were not streamlined into regular workflows, compared to more experienced practices. This is reflected in the range across the four study practices in supervision hours and PGY2 consultations. If we are to increase PGY2 placements in general practice, guidance and support around PGY2 hosting need to be developed nationally, with the insight of practices, medical educators and RMO units experienced in this.

TWO could bring pay parity to the general practice CBAs by including general practice on-call hours in the grading the PGY2 CBAs to match hospital placements. Perhaps more importantly, the hidden message that general practice was 'lesser' would be removed.

It is encouraging that supervising GPs want to create a sustainable workforce. However, as we have demonstrated, PGY2s being employed by the hospital but working in a separate environment was fraught, and funding does not adequately recompense practices for the time and efforts required for this to be a positive PGY2 experience. Further support and incentives for participating in this program are required.

Since this study was undertaken, HWD introduced funding of \$3600 per placement to practices hosting PGY2s.<sup>16</sup> Our small study showed that this funding would need to increase to cover the true cost to practices, and substantially

if the cost of room space is considered. To mitigate the current and impending GP workforce crisis, we need action now.

## Supplementary material

Supplementary material is available [online](#).

## References

- 1 Royal New Zealand College of General Practitioners. Te Rangahau Ohu Mahi The Workforce Survey 2022 Time Series Report. Wellington, NZ: Royal New Zealand College of General Practitioners; 2023.
- 2 Seleg S, Jo E, Poole P, *et al*. The employment gap: the relationship between medical student career choices and the future needs of the New Zealand medical workforce. *N Z Med J* 2019; 132(1506): 52–9.
- 3 Poole P, Wilkinson TJ, Bagg W, *et al*. Developing New Zealand's medical workforce: realising the potential of longitudinal career tracking. *N Z Med J*. 2019; 132(1495): 65–73.
- 4 Illing J, Van Zwanenberg T, Cunningham WF, *et al*. Preregistration house officers in general practice: review of evidence. *BMJ* 2003; 326(7397): 1019–22. doi:10.1136/bmj.326.7397.1019
- 5 Martin AA, Laurence CO, Black LE, *et al*. General practice placements for pre-registration junior doctors: adding value to intern education and training. *Med J Aust* 2007; 186(7): 346–9. doi:10.5694/j.1326-5377.2007.tb00934.x
- 6 Spooner S, Pearson E, Gibson J, *et al*. How do workplaces, working practices and colleagues affect UK doctors' career decisions? A qualitative study of junior doctors' career decision making in the UK. *BMJ Open* 2017; 7(10): e018462. doi:10.1136/bmjopen-2017-018462
- 7 de Beer W, Clark H. Four years of prevocational Community Based Attachments in New Zealand: a review. *N Z Med J* 2021; 134(1539): 56–62.
- 8 Sheehan D, Thwaites J, Weenink V, *et al*. PGY2 attachments in general practice - a New Zealand experience. *N Z Med J* 2017; 130(1451): 72–4.
- 9 Scott-Jones J, Lucas S. Rural general practice training: experience of a rural general practice team and a postgraduate year two registrar. *J Prim Health Care* 2013; 5(3): 243–8.
- 10 GPNZ. Welcome to General Practice New Zealand (GPNZ). New Zealand: General Practice NZ; 2023. Available at [gpnz.org.nz](http://gpnz.org.nz)
- 11 Robinson OC. Sampling in interview-based qualitative research: a theoretical and practical guide. *Qual Res Psychol* 2014; 11(1): 25–41. doi:10.1080/14780887.2013.801543
- 12 Whitehead J, Davie G, de Graaf B, *et al*. The Geographic Classification for Health, Methodology and classification report. New Zealand: University of Otago; 2021.
- 13 Medical Assurance Society. GP Locum/Associate Remuneration Report 2021. New Zealand: Medical Assurance Society; 2021.
- 14 New Zealand Nurses Organisation. Primary Health Care Multi-Employer Collective Agreement (MECA) 2021. New Zealand Nurses Organisation; 2021.
- 15 MedTech Global. Our fees are changing from 1 January 2022. Auckland: MedTech Global; 2021.
- 16 Little A. Plan for big boost in GP training numbers [press release]. Wellington, NZ: New Zealand Government; 2022.
- 17 Gale NK, Heath G, Cameron E, *et al*. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol* 2013; 13(1): 117. doi:10.1186/1471-2288-13-117
- 18 Parekh R, Jones MM, Singh S, *et al*. Medical students' experience of the hidden curriculum around primary care careers: a qualitative exploration of reflective diaries. *BMJ Open* 2021; 11(7): e049825. doi:10.1136/bmjopen-2021-049825

**Data availability.** Full de-identified interview transcripts will not be shared. Informed consent, in line with the approving ethics committee, only allows for the use of de-identified extracts within research reporting and writing.

**Conflicts of interest.** Carol Atmore, Jessica Millar, Aisha Paulose, Andy Shute and Dot Brown are either presently or previously employed at WellSouth Primary Health Network. Tim Stokes is an Editor of the *Journal of Primary Health Care* but was blinded from the peer review process for this paper.

**Declaration of funding.** This research was funded by WellSouth Primary Health Network.

**Acknowledgements.** The authors thank the practices and the participants who gave their time for interviews.

### Author affiliations

<sup>A</sup>WellSouth Primary Health Network, Level 2, 333 Princes Street, Dunedin 9016, New Zealand.

<sup>B</sup>Department of General Practice and Rural Health, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

<sup>C</sup>University of Otago, Christchurch, New Zealand.

<sup>D</sup>Department of Preventive and Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.