

# Bridging the gap between primary and secondary care: a utilisation evaluation of an otolaryngology GPwSI programme

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## ABSTRACT

**Introduction.** Counties Manukau Health Otolaryngology programme for general practitioners with special interest (GPwSI) was developed to provide a group of GPs with tools to manage low complexity, secondary otolaryngology (ORL) problems in their local communities. After clinical triaging, the medical records were retrieved to assess patient outcomes from community (GPwSI) review. This programme provides an example of how the aims of the Health NZ reforms may work in practice, by bridging primary and secondary services. **Aim.** To assess whether the GPwSI programme provides patients with suitable specialty care in the community, compared to a specialised, hospital outpatient otolaryngology clinic (OPC). **Methods.** This is a retrospective study of patients with an assigned priority of three (non-urgent) referred to Middlemore Hospital for a first specialist assessment (FSA) during 2018–19. **Results.** Of the 6231 patients referred, one-fifth (22%) were directed to the GPwSI service, and the remainder (78%) were arranged to be seen in the OPC. GPwSI patients were more likely to be seen for their FSA earlier than OPC patients (RR 1.55, 95% CI 1.46–1.64,  $P < 0.05$ ). Most patients (99%) referred for surgery by GPwSIs and about one-quarter (23%) of GPwSI patients (315/1345; 23%) were assigned to GPwSI follow up, of which almost all (95%) were managed within the GPwSI programme. **Discussion.** Patients being seen through the GPwSI programme are suitably managed in the community, more efficiently than if they were to be seen in an outpatient specialist clinic.

**Keywords:** general practitioners, health services, models of care, New Zealand health reforms, New Zealand health strategy, otolaryngology, performance and evaluation, primary health care.

## Introduction

The recent Health and Disability System Review has described the current state of New Zealand's health system as complex, fragmented, and stressed. These findings have laid the foundation for the current New Zealand Health reforms. One of the major recommendations is the seamless integration of primary care with specialist services, so the system functions more collaboratively and cohesively.<sup>1</sup> General practitioners with special interests (GPwSIs) provide an alternative model of care whereby a GP with some specialty training can assess selected patients and improve access in areas – such as otolaryngology (ORL) – known for longer wait times.<sup>2–5</sup> A systematic review conducted in 2019 found that GPwSIs can provide care sooner and reduce the burden on specialty services.<sup>3</sup> Evaluation of GPwSI programmes overseas show they are more accessible, achieve similar clinical outcomes to specialists, and are preferred by patients.<sup>5</sup> In 2005, the Counties Manukau Health (CMH) ORL GPwSI programme was established, with the aim of providing GPs with the clinical skills and necessary equipment that most community GPs lack, to assess patients with specific ORL conditions in their local communities. As this is a unique model of care in New Zealand, an evaluation of the programme was conducted to determine whether it still provides optimal, convenient, and more integrated care.

## WHAT GAP THIS FILLS

**What is already known:** The NZ Health reforms aim for more integration and a seamless transition between primary and secondary health services. GPwSIs overseas have been shown to provide suitable, efficient secondary care within the primary care setting.

**What this study adds:** This study supports one of the goals of Health NZ reforms, through a programme that provides secondary level care within the primary setting at greater convenience and no disadvantage to patients. It shows how GPwSIs can function within the context of the New Zealand health system to help improve wait times and provide suitable specialty care, often without the need for specialist intervention.

## Methods

We conducted a retrospective study of patient referrals for a first specialist assessment (FSA) to the CMH ORL Department. Referrals were triaged according to a Departmental prioritisation policy, namely: (P1 = urgent, P2 = semi-urgent, and P3 = routine case). Currently, there are five GPwSIs, operating out of their respective practices in Counties Manukau. GPwSIs are trained for three months, observing in the otolaryngology outpatient clinic (OPC), before running their own supervised clinics and sitting an accreditation exam. They are provided with examination tools and trained to manage ORL issues, which community GPs cannot.

Based on information in the referral letter, P3 cases (such as tonsillitis, otitis media, and rhinosinusitis) were identified and triaged to the programme. Triaging was based on many factors, such as access to a consultant at OPC being readily available or not. Data were collected and stored in a secure, password protected District Health Board (DHB) Excel Database.

The study group comprised P3 FSA referrals seen by a GPwSI in the period 1 January 2018 to 31 December 2019. This period was chosen due to the unknown impact of the coronavirus disease 2019 (COVID-19) pandemic on the programme. A comparison group consisted of those remaining P3 patients who were seen in the OPC in the same period for similar issues. The Auckland Health Research Ethics Committee (Project ID 23319) granted ethics approval.

## Results

There were 6231 patient referrals with an assigned priority of 'P3'. Of these referrals, one-fifth (22%) were re-directed to the community GPwSI service; the remaining patients (78%) were directed to be seen in the OPC. The interval

between referral letter arriving and the time of clinical review was noted. Attendance rates were equivalent for GPwSI and OPC FSAs (91 and 92% respectively). Financial assessment showed that for this programme, GPwSI appointments are cheaper than OPC (Table 1).

## Efficiency of the service

The days waiting for each FSA appointment was calculated from the date referrals were received to the date of the appointment with either the GPwSI or OPC. Differences between groups were assessed using the Kruskal–Wallis test. OpenEpi was used to calculate the likelihood that GPwSI patients were seen in a timely manner ( $\leq 120$  days). A Chi-squared test was used to test for significant difference.

Overall, GPwSI patients waited less time for their FSA than OPC patients. The GPwSI group were 1.55-fold as likely to be seen within a timely manner ( $\leq 120$  days) compared with OPC patients with the same priority in the same period (RR = 1.55; 95% CI = 1.46–1.64;  $P < 0.05$ ).

The overall median interval between referral and clinical review in the OPC was 109 days (IQR = 79–239;  $P < 0.05$ ) and for GPwSI patients, it was 128 days (IQR = 48–278;  $P < 0.05$ ).

## Effectiveness of the service

The type of appointment (FSA or follow up); location and date of the appointment; demographic patient data; which GPwSI was involved; and patient attendance was identified. The principal FSA outcomes were reviewed, and suitability of each was assessed using the Wald test, with normal approximation 95% confidence intervals being calculated. For patients referred to the surgical waitlist, further details were extracted regarding the prioritisation of surgery. This information was used to generate definitions of FSA outcome suitability.

If the GPwSI encounter resulted in a 'Discharge to GP' outcome, it was considered likely that the patient would not need re-referral for the same condition within 6 months. 'Unsuitable' discharges were defined where a re-referral was made for the same condition  $< 6$  months after the initial discharge. Two patients were excluded from this analysis due to incomplete clinic records. Those patients 'Referred for follow up', but where no follow up occurred were deemed 'Lost to Follow Up'. The outcome 'Other' was

**Table 1.** Average cost (NZ\$) per appointment for P3 patients seen in a GPwSI clinic and OPC 2018–19.

Clinic	2018	2019
GPwSI	236	236
OPC	405	478

**Table 2.** Distribution and suitability of GPwSI patient outcomes following FSA 2018–19.

Outcome	Patient count (%)	Suitability of outcome (95% CI)
Referred for follow up	470 (40)	Not Applicable
Referral to surgical waitlist	459 (39)	99% (98.28–99.98)
Discharge to GP	209 (18)	99% (97.70–100.00)
Other	41 (3)	Not Applicable
Total	1179	

assigned when patients were referred elsewhere, such as for a test, procedure or to another CMH specialty or DHB.

There was mixed distribution of patient outcomes following GPwSI FSA (Table 2). Altogether, 459 GPwSI FSA patients were 'Referred to surgical waitlist'. Virtually all (99%; (95% CI: 98–100)) of the GPwSI patients referred onto the surgical waitlist following their FSA had surgery as planned. Of the four unsuitable waitlist referrals, one patient was removed under consultant direction and three were returned to their GP due to their national surgical prioritisation score being below the threshold for surgery.

There were 209 GPwSI patients discharged back to their original GP. Of these, the majority ( $n = 185$ , 89%) had no further referrals. Only two patients were re-referred for the same issue <6 months after the FSA and were deemed unsuitable discharges (1%, 95% CI: 0.00–2.30).

Follow-up appointments were given to 470 GPwSI patients. Of these, 315 (67%) were seen by a GPwSI, whereas 53 (11%) were seen in the OPC by a specialist. A further 102 patients (22%) had no record of a follow up and were excluded. Three main outcomes were identified for patients seen by a GPwSI for follow ups, which took place over 2018–21: (a) discharge to own GP; (b) referred onto the surgical waiting list; or (c) OPC follow up (Table 3). There were also 53 patients followed up in the OPC for sundry logistic or administrative reasons (Table 4). Of the 13 patients seen for a second opinion, the consultant reached the same diagnosis as the GPwSI in 10 cases (77%). Overall, 299 (95%) patients who were followed up by a GPwSI were managed entirely within the GPwSI programme.

## Discussion

The GPwSI programme provides an example of how the gap between primary and secondary care may be managed. Patients seen through the GPwSI program are, for the most part, able to be managed entirely in the community, faster than in the OPC. The exceptionally low proportion of unsuitable outcomes indicates that most patients can be seen effectively in the primary care setting for low-acuity cases, with no negative outcomes from the service. Most OPC clinic patient follow ups were directed there because

**Table 3.** Distribution of outcomes for patients after a GPwSI follow-up appointment 2018–21.

GPwSI follow-up outcome	Patient count (%)
Discharge to GP	216 (69)
Referred to surgical waitlist	83 (26)
OPC follow up	16 (5)
Total	315

**Table 4.** Reasons for an outpatient clinic (OPC) follow-up appointment for GPwSI patients 2018–19.

Reason for OPC follow up	Patient count (%)
Referred for test/procedure	29 (55)
Referred for second opinion	13 (24)
Referred to discuss surgery	11 (21)
Total	53

the cases went beyond the scope of the GPwSI practitioners' resources and training. The low number of patients who received a different diagnosis after OPC follow up suggests GPwSIs offer good diagnostic accuracy, as previous studies have shown.<sup>6</sup> Brief cost analysis showed that GPwSI appointments are cheaper than routine (P3) appointments in an OPC.

Data quality is a weakness of the study, as GPwSI suitability relied on the availability of clinic notes. Outcomes were used as the surrogate measure of the programme's suitability, meaning that administrative errors affected the outcome category. For instance, 142 patients were categorised as 'Referred to another CMH specialty', despite being 'Referred to surgical waitlist'. If patient pathways have been miscategorised, this may affect accuracy of these surrogate outcomes. Additionally, details of the ORL conditions, as well as demographic information were not available for OPC appointments, which may impact comparability. The median days waiting for an FSA dropped significantly in 2019 for GPwSI patients due to more effective triaging, whereas OPC remained consistent, explaining the discrepancy between median days waiting and the relative risk.

Consistent with findings from previous studies,<sup>5,7</sup> GPs who have received specialist training can provide comparable secondary care services to patients, within their own community. One study reviewed completeness of skin lesion excision between GPwSIs and dermatologists.<sup>8</sup> Narrowing the inclusion criteria to a specific subset of P3 cases would have allowed for a more accurate comparison between the GPwSI and OPC groups.

Two of the Five System Shifts for Health NZ are providing care closer to home and improving access to specialty care.<sup>9</sup> GPwSI programmes put these policies into practice. Barriers to primary care include time, transport, and cost.<sup>10</sup> The GPwSI programme improves access to health care by addressing some of these barriers. GPwSIs provide

accessible secondary care with minimal harm to patients. The ability for GPwSIs to suitably address ORL issues, while having support from OPC specialists, illustrates one way of how the links between primary and secondary care can be safely achieved.

Further evaluation of the patient perspective would be useful in assessing how the programme serves its communities. Despite the GPwSI programme theoretically being more accessible for patients, the overall attendance rates between GPwSI and OPC patients were comparable, meaning further analysis into access is needed. A randomised controlled trial of similar low acuity cases would be a rigorous way of evaluating the effectiveness of GPwSI programmes.

## Conclusion

Overall, the GPwSI programme demonstrates the ability for primary and secondary care to work collaboratively in a low-harm scenario, providing an efficient and cost-effective service. It shows how to effectively meet the aims of Health NZ in terms of integration, with GPwSIs acting as the bridge between primary care and specialist services.

## References

1 Department of the Prime Minister and Cabinet. The Health and Disability System Review. (DPMC, CAB-20-SUB-0369); 2020.

- Available at <https://dpmc.govt.nz/sites/default/files/2021-04/health-reform-white-paper-summary-apr21.pdf>
- 2 Jones R, Rosen R, Tomlin Z, et al. General practitioners with special interests: evolution and evaluation. *J Health Serv Res Policy* 2006; 11(2): 106–109. doi:10.1258/135581906776318929
  - 3 Yellamaty V, Ball L, Crossland L, et al. General practitioners with special interests: an integrative review of their role, impact, and potential for the future. *Aust J Gen Pract* 2019; 48(9): 639–643. doi:10.31128/ajgp-02-19-4849
  - 4 Winpenny EM, Miani C, Pitchforth E, et al. Improving the effectiveness and efficiency of outpatient services: a scoping review of interventions at the primary–secondary care interface. *J Health Serv Res Policy* 2017; 22(1): 53–64. doi:10.1177/1355819616648982
  - 5 Salisbury C, Noble A, Horrocks S, et al. Evaluation of a general practitioner with special interest service for dermatology: randomised controlled trial. *BMJ* 2005; 331(7530): 1441–1446. doi:10.1136/bmj.38670.494734.7c
  - 6 Botting J, Correa A, Duffy J, et al. Safety of community-based minor surgery performed by GPs: an audit in different settings. *Br J Gen Pract* 2016; 66(646): e323–e328. doi:10.3399/bjgp16x684397
  - 7 Taneja A, Singh PP, Tan JPL, et al. Efficacy of general practitioners with specialty interests for surgical procedures. *ANZ J Surg* 2015; 85(5): 344–348. doi:10.1111/ans.12721
  - 8 Salmon P, Mortimer N, Rademaker M, et al. Surgical excision of skin cancer: the importance of training. *Br J Dermatol* 2010; 162: 117–122. doi:10.1111/j.1365-2133.2009.09548.x
  - 9 Te Whatu Ora. Changing the System. Wellington: Health NZ. Available at <https://www.tewhatauora.govt.nz/whats-happening/changing-the-system/> [Accessed 18 July 2022].
  - 10 Jeffreys M, Smiler K, Loschmann LE, et al. Prevalence and Consequences of Barriers to Primary Health Care. Wellington: Ministry of Social Development; 2021. Available at <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/barriers-to-primary-health-care/prevalence-and-consequences-of-barriers-to-primary-health-care.pdf>

**Data availability.** The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author, if appropriate.

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