

# Audit of a Services to Improve Access project to improve access for skin cancer surgery

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## ABSTRACT

Like many general practices in low decile communities with a high percentage of elderly patients, the Paeroa Medical Centre was relying heavily on secondary care to provide skin cancer surgical services, which led to delays in treatment and under-utilisation of the skills available in primary care. A new system utilising Services to Improve Access (SIA) funding was developed to provide partially funded skin cancer surgery within primary care. A 6-month period of this work by one general practitioner (GP) was audited. This has demonstrated that the majority of minor dermatological surgery can be successfully managed in primary care, with more timely and convenient treatment and substantial cost savings to the health system.

**KEYWORDS:** Skin cancer surgery; audit; primary care

## Introduction

Minor surgery for suspected skin cancer has been performed in primary care, secondary care and private specialist practice (dermatology, general and plastic surgery). As in other areas of health care, it is well recognised that management in primary care is generally more convenient for patients. However, relocating specialists to primary care clinics often increases costs due to loss of efficiencies of scale.<sup>1</sup>

It is often assumed that primary care providers deliver services more cost-effectively than services provided in secondary care, but the evidence for this is inconclusive. Careful research or audits of individual projects and incentives are required to indicate the likely cost-effectiveness and quality of these projects.<sup>2</sup> In a UK study, George *et al.*<sup>3</sup> conducted a large prospective randomised trial of minor surgery in primary versus secondary care. They concluded that the quality of surgery in primary care was inferior to the quality in secondary care, with no evidence of cost savings due to a significantly higher incidence of re-excisions. They suggested that further training of general

practitioners (GPs) and careful evaluation would be required for this work to be successfully transferred to primary care. In the 'Canterbury Initiative',<sup>4</sup> plastic surgeons triaged referrals and provided supervision and feedback to upskill GPs who were able to access a District Health Board (DHB) subsidy to provide funded excisions of skin cancers. Evaluation of this initiative showed reduced waiting times for minor surgery, reduced referrals to secondary care, and good quality measures.<sup>4</sup>

## Context

The Paeroa Medical Centre has an enrolled population of 5000 patients. Paeroa is a rural town in the Hauraki District with a high Māori population, a low decile status and a high percentage of elderly people. This combination provides a challenge to primary care because these patients have very high health needs, financial and other barriers to accessing timely and affordable health care. The GPs became concerned about the very high number of skin cancers that they were seeing in their elderly patients, most of whom had a lifelong history of high sun exposure from

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outdoor occupations. Most of these suspected cancers (~90%) were referred to secondary care, even though the GPs were able to treat them in primary care, simply because there was no public funding for primary care treatment and patients were unable to afford GP treatment. The Primary Health Organisation (PHO) did have a voucher system to fund minor surgery; however, there were only ~50 vouchers per year for the practice, with approximately 200–250 minor surgical procedures required per year. The GPs tried unsuccessfully to petition the PHO to provide more vouchers.

### Assessment of problem

A tragic case then occurred where an elderly patient was referred to General Surgery at the hospital for excision of a suspicious lesion on her lower leg. The lesion could have easily been excised by her GP but the practice had run out of vouchers and the patient was unable to afford the fee (NZ\$150 at the time) for excision at the practice. After some weeks the patient was seen in the hospital's Surgical Clinic and booked for surgery. However, by the time surgery was scheduled, the lesion had grown and was no longer suitable for excision with direct closure, so she was referred to the Plastic Surgical Clinic. After several months, the patient was seen by a locum GP for an unrelated matter and mentioned that she had still not been seen in the Plastic Surgical Clinic. The locum was concerned about the appearance of the lesion and the delay in assessment and treatment, so sent a further referral to Plastics requesting an urgent appointment. After several weeks, she was seen by the plastics registrar and booked for surgery. After several more weeks, she underwent a large excision and skin grafting and had to stay for several weeks in hospital as an inpatient. Histology revealed an advanced amelanotic melanoma. The time from the original referral until surgery was 12 months due to the various delays. Subsequently, she developed metastases requiring multiple excisions and skin grafting with prolonged hospital admissions. After five years, she required in-patient palliative care and has subsequently died from metastatic melanoma.

Following this case, the GPs spoke with an alternative PHO that had a flexible approach to

Services to Improve Access (SIA) funding and a philosophy of 'local solutions for local health needs'. The Paeroa Medical Centre changed to this PHO and has now been running a SIA Minor Surgery Project for 5.5 years, undertaking 949 funded minor surgical procedures, which are available to all enrolled patients holding a community- or high-user health card (A1/AZ). There is still a surcharge of NZ\$30 for these patients. The author also attends regular sessions with a local plastic surgeon in his rooms, which has been invaluable for mentoring and professional development.

The current audit examines the proportion of skin lesions presenting to a GP with a special interest in skin surgery that can be managed within primary care and estimates the likely cost savings to the health system by using a simple SIA funding model.

All patients with skin lesions presenting to one of the full-time GPs were followed over a 6-month period through to final treatment and histological outcomes. The cost of these procedures was calculated, and assumptions of treatment cost in secondary care were made to estimate cost savings to the health system for the index cases of the audit and the estimated cost saving per patient treated within the Minor Surgery Project. These cost assumptions were based on estimations from secondary care colleagues, as the DHB was unable to provide cost estimates of minor surgery provided in secondary care. The time from referral to surgery has not been analysed, but was usually within 1 week, and wider excisions were carried out approximately one month following primary excision, once adequate wound healing had occurred. In the Southern DHB,<sup>5</sup> initiative waiting times were also very low, ranging from 12.3 to 14 days from the time of referral until surgery was performed.

### Audit results

All of the 49 patients in the audit required surgery and 97% received that surgery in primary care; one was referred to hospital for clinical reasons and another because of the cost in primary care. Most (73%) were entitled to subsidised care, but 13 (27%) people were unsubsidised. Of the 57 lesions excised, 47% were from the head or neck

and 53% from other sites. The histology of excised lesions is shown in Table 1. Five lesions (9%) required wider excision, which was also carried out in general practice.

Table 2 shows the actual costs of treating the audited patients in the Minor Surgery Project and the estimated cost to the DHB, had their care been provided in hospital. Cost to the patient of NZ\$100 was attributed based on travel and cost of general practice follow up. Cost to the DHB was estimated at NZ\$100 for an initial appointment and NZ\$1500 for treatment in day theatre. These results show that the procedures the audited patients received in general practice was one-seventh of the cost of the same procedures if they had been conducted in hospital. Overall, during the audit period, the Minor Surgery Project saved the DHB NZ\$68,550 and since its inception in January 2010, the 949 patients treated in the Minor Surgery Project have saved the DHB NZ\$1,384,127 (NZ\$1459 per person).

### Strategies for quality improvement or change

A copy of the audit results was made available to the Huaraki PHO and Waikato DHB to assist in their review of SIA projects. The overall report will be reviewed by the Waikato DHB and used to plan future primary care funding. The audit was also shared with staff and doctors at the Paeroa Medical Centre and has reinforced the impression they have had that most skin cancer surgery can be very effectively provided within primary care. The model has been recently adjusted so that subsidised surgery is available only to patients holding a community or high-user health card (previously, this was also available to patients over 65 years of age without a card). This change was necessary to keep the project within budget. Although it has resulted in some patients over 65 years requesting referral to secondary care, these numbers remain quite low and it does not appear to have undermined the overall effectiveness of the project.

A UK study<sup>2</sup> suggested that the quality of treatment in primary care is inferior to secondary care, as only 44% of malignant lesions were 'completely excised' compared with 75% in

Table 1. Histology of excised lesions

Histology	Number of lesions	Percentage
Basal cell carcinoma	16	28
Squamous cell carcinoma	11	19
Solar keratosis with dysplasia	10	18
Solar keratosis without dysplasia	8	14
Miscellaneous benign lesions	8	14
Squamous cell carcinoma <i>in situ</i>	3	5
Melanoma/melanoma <i>in situ</i>	1	2

secondary care. In this audit, 91% of malignant lesions did not require wider excision and all lesions had clear margins, but secondary excision was performed when a wider margin was considered preferable based on histology. In the Southern DHB initiative, only 4.8% of lesions were reported as incompletely excised.<sup>5</sup> Although the current audit involved only one GP, similar quality was achieved for GP excisions in the study by McGeoch *et al.*<sup>4</sup>

Only 7% of lesions excised by GPs in the UK study<sup>2</sup> were malignant, compared with 54% in the current study, suggesting better specificity in identifying malignant lesions in this audit. Some cautions need to be applied to any conclusions based on an audit from a single practitioner, but similar results were obtained by McGeoch *et al.*,<sup>4</sup> with over 50% of excisions being for malignant lesions. The funding for the Canterbury Initiative is targeted at suspected malignant lesions, but the subsidy for the Minor Surgery Project covers all lesions in eligible patients, including benign lesions removed for reasons other than suspected malignancy (e.g. epidermal cysts), so fewer malignant lesions were expected in this audit. The audit did not record the number of complications, but the Southern DHB initiative showed a complication rate (dehiscence, infection) of 8% at the beginning of the programme, dropping to only 2.6% in 2010–2011 year, suggesting that the quality of primary care treatment can be equivalent to the quality in secondary care.

Table 2. Actual primary care costs (NZ\$) and estimated hospital costs (NZ\$) for minor surgery of audited patients

	Surgical procedure in primary care			Surgical procedure in hospital	
	Number of patients	Cost per patient	Total cost	Cost per patient	Total cost
<b>Cost to patient</b>					
Subsidised patients (A1/AZ)	35	\$30	\$1,050	\$100	\$3,500
Unsubsidised patients (A3)	12	\$250	\$3,000	\$100	\$1,200
<b>Cost to DHB</b>					
Subsidised patients (A1/AZ)	35	\$200 (×33) \$350 (×2)	\$7,300	\$1,600	\$56,000
Unsubsidised patients (A3)	12	\$0	\$0	\$1,600	\$19,200
<b>Overall cost</b>		<b>\$241.49</b>	<b>\$11,350</b>	<b>\$1,700</b>	<b>\$79,900</b>

DHB, District Health Board.

## Lessons and messages

This audit supports the view that most skin lesions requiring surgery can be successfully treated within primary care. The surgery can be provided very rapidly from the time of presentation, avoiding disease progression and the need for more complex treatment in secondary care. Treatment within primary care is also more convenient for patients as it can be provided locally, at a convenient time and can be directly booked from the first GP presentation. Where further treatment is required (e.g. wider excision), most cases can also be treated in primary care. Although it is difficult to accurately estimate the true cost of providing minor surgery in secondary care, it is clear that substantial savings could be made if a similar funding model was rolled out at a regional or national level. Although not all GPs have a special interest in minor surgery, the model could be adapted so that funding stays with patients, and treatment is provided by accredited GPs who undertake ongoing professional development in skin surgery or in practices where a GP with a special interest provides mentoring for other GPs in the practice. Collaboration with secondary care is also an essential component to ensure a high-quality service.<sup>4,5</sup>

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## COMPETING INTERESTS

None.

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