

# Evaluation of a Primary Care Dermatology Service: final report

---

*Report for the National Co-ordinating Centre  
for NHS Service Delivery and Organisation  
R&D (NCCSDO)*

*December 2005*

prepared by

Chris Salisbury\*

Alison Noble\*

Sue Horrocks†

Jo Coast‡

Sian Noble‡

Zoe Crosby¶

Viv Harrison§

Oya Asim‡

David de Berker§

Tim Peters\*

\*Academic Unit of Primary Health Care, Department of  
Community Based Medicine, University of Bristol, Bristol

†Faculty of Health and Social Care, University of West of England,  
Bristol

‡Department of Social Medicine, University of Bristol, Bristol

¶Department of Primary Health Care, University of Southampton,  
Southampton

§Bristol Royal Infirmary, Bristol

Address for correspondence

Professor Chris Salisbury, Professor of Primary Health Care,  
Academic Unit of Primary Health Care, University of Bristol,  
Cotham House, Cotham Hill, Bristol BS6 6JL, UK

Tel: 0117 954 6658; e-mail: c.salisbury@bristol.ac.uk

## ***Executive Summary***

### ***Introduction***

The NHS Plan promoted the concept of the general practitioner with special interests (GPSI). There were a number of factors leading to this initiative, in particular the need to increase capacity in the face of rising demand for specialist advice and to reduce excessive waiting lists for hospital outpatient appointments.

Many GPSI schemes have been established by Primary Care Trusts (PCTs) in a number of clinical fields, but there is a lack of evidence about the costs and benefits of these schemes. A GPSI service for dermatology was established in Bristol in 2001, and was subject to rigorous evaluation. Dermatology represents one of the most common causes for consultation in primary care and for referral to secondary care. More GPSIs are operating in dermatology than in any other clinical speciality, other than diabetes.

### ***Setting and intervention***

The Bristol Primary Care Dermatology Service (PCDS) is staffed by two GPSIs and a specialist nurse, and is provided from a suburban health centre. It provides care for patients referred by general practitioners in the area served by Bristol South and West PCT. Patients are referred by their general practitioners (GPs) to the outpatient Dermatology Centre at the Bristol Royal Infirmary as usual. Those who appear on the basis of their referral letter to be suitable for management in the PCDS are given an appointment there rather than at the outpatient department. At the time of the trial, suitable patients were adults with non-urgent skin conditions with a provisional diagnosis made by their GP.

### ***Aims and objectives***

#### **Aim**

The aim of this study was to investigate the effectiveness, cost-effectiveness, accessibility and acceptability of a PCDS in comparison with a hospital outpatient clinic for dermatology.

#### **Research objectives**

- To determine the proportion of patients referred by general practitioners with dermatological problems which can be managed in a PCDS rather than a specialist dermatology hospital outpatient clinic.

## ***Evaluation of a Primary Care Dermatology Service***

- To determine whether a PCDS impacts on access to care for patients.
- To compare the effectiveness and cost-effectiveness of providing care in a PCDS or a hospital outpatient clinic. Costs are assessed from a societal perspective with patient costs and NHS costs clearly distinguished.
- To determine patients' satisfaction with care received in the PCDS compared with a hospital outpatient clinic.

### ***Overview of study design***

- A randomised controlled trial comparing patients referred to the PCDS with those receiving usual care at the hospital outpatient clinic.
- An economic evaluation providing data about the cost-effectiveness of these alternative models of service provision.
- Analysis of routine data from the study PCT and three neighbouring trusts, providing further information about referral rates and waiting times for appointments.
- A qualitative study exploring issues that were important to patients in relation to improving access to dermatology services.
- A discrete-choice modelling study quantifying patients' preferences for different aspects of access to dermatology services.

## ***Methods and results***

### **Randomised controlled trial**

#### ***Methods***

All adult dermatology referrals from 30 practices in one PCT area over 14 months were triaged according to potential suitability for PCDS, and suitable patients invited to participate. Consenting patients were randomised in a 2:1 ratio to the PCDS or usual outpatient care. Primary outcomes were disease-related quality of life (Dermatology Life Quality Index (DLQI), with higher scores reflecting worse quality of life) and improved patient-perceived access (using a new scale devised for this study, scored out of 100). Secondary outcomes were waiting times, rates of non-attendance (did not attend (DNA) rates), patient satisfaction (Consultation Satisfaction Questionnaire (CSQ), scored out of 100) and patient preference. Outcomes were assessed 9 months after randomisation. Analysis was by intention-to-treat. Process measures included follow-up rates at the PCDS or hospital. Sample-size calculations were based on seeking to establish equivalence between the PCDS and hospital in terms of effectiveness (the DLQI). A sample size of 290 patients in the primary-care arm and 145 patients in the hospital arm would provide 80% power to rule out

## ***Evaluation of a Primary Care Dermatology Service***

differences larger than 0.285 standard deviations in either direction, on the basis of two-sided 95% confidence intervals and assuming no difference between the two groups in terms of (true) effectiveness.

### ***Results***

Of all referrals, 49% (987/2028) appeared from the referral letter to be suitable for management in the PCDS. After exclusions, of the 768 patients eligible, 556 (72%) were randomised, 354 to PCDS and 202 to outpatients. After 9 months, 422 (76%) were followed up. Patient characteristics in trial arms were similar at baseline. There were no marked differences between the PCDS and hospital care in respect of clinical outcome (median DLQI was 1 in both arms; ratio of geometric means, 0.99; 95% confidence interval (CI), 0.85–1.15;  $P=0.9$ , adjusting for baseline and stratification). The PCDS was more accessible (the difference between means on the access scale (scored out of 100) was 14; 95% CI, 11–19;  $P<0.001$ ) and patients had reduced waiting times by a mean of 40 days (95% CI, 35–46 days;  $P<0.001$ ). Patients expressed slightly greater satisfaction with PCDS consultations (difference in mean CSQ, 4%; 95% CI, 1–7%;  $P=0.011$ ) and were more likely to prefer care at PCDS, both at baseline and after 9 months. Fewer PCDS patients (6%) than hospital patients (11%) failed to attend their initial appointment, but overall DNA rates for new and follow-up appointments were similar in both sites (PCDS, 8%; hospital, 11%). Of those patients seen initially at PCDS, 12% were referred to the hospital for one or more follow-up appointments.

## **Economic evaluation**

### ***Methods***

Costs were evaluated from the perspective of the NHS, patients, their families and society for the 9 months following randomisation. Costs identified as being important included: the costs of consultation in secondary and primary-care services; investigations, medication and procedures; travel costs; over-the-counter costs; costs of private treatment; and costs of lost production. Resource-use data were collected from a combination of NHS computerised systems and patient questionnaires, and were valued at 2004 prices using data from the hospital, the PCDS and a variety of national sources. Cost-effectiveness, using the two primary outcomes of the DLQI and improved patient-perceived access, was assessed in terms of incremental cost-effectiveness ratios and cost-effectiveness acceptability curves. Cost-consequences are presented in relation to all costs and both primary and secondary outcomes from the trial. One sensitivity analysis was conducted to estimate the impact of increasing the number of patients seen in the PCDS.

## ***Evaluation of a Primary Care Dermatology Service***

### ***Results***

The costs to the NHS of the PCDS were considerably greater than the costs of hospital outpatient care (cost per patient over 9 months: PCDS, £207.91; hospital, £118.13). This was mainly due to the higher costs of doctors' and nurses' time, which were related to the longer consultations at the PCDS, the higher number of consultations received by patients in the PCDS and the higher cost of nurse consultations. The cost to patients of attending the PCDS was less than that of attending the hospital, as was the cost of lost production. This was due to the finding that patients attending the PCDS lost less time from work. Based on analysis with imputation of missing data, costs to patients and companions were £48 at PCDS and £51 at hospital; costs of lost production were £27 at PCDS and £34 at hospital. The incremental cost-effectiveness ratios for PCDS over hospital care were (i) £540 per one-point gain in the DLQI and (ii) £66 per ten-point change in the access scale.

Overall, when NHS, patient and lost production costs were combined, the cost of providing care at the PCDS was greater than the cost of providing hospital outpatient care. This overall finding was not influenced by the sensitivity analysis.

### **Analysis of waiting times and referral rates**

#### ***Methods***

Routine data about referrals to dermatology outpatient departments from GPs in the study PCT and three neighbouring PCTs were obtained from the Avon Information Management and Technology consortium. Descriptive analysis was conducted, as the small number of trusts and the high level of month-to-month variation made statistical comparison inappropriate.

#### ***Results***

Before the study began the acute trust that was the focus of this research had lower waiting times than other trusts. Over the period of the study waiting times in neighbouring trusts improved so that mean waiting times converged at about 65 days in all trusts.

Between 2001 and 2004 the number of referrals to dermatology from GPs in the study PCT increased by 22%, compared with smaller increases in the neighbouring PCTs.

The total number of patients transferred from the outpatient department in this study to the PCDS represented just 8% of all referrals received. Therefore it is unlikely that the PCDS would have a major impact on waiting times at the acute trust.

## ***Evaluation of a Primary Care Dermatology Service***

### **Qualitative study**

#### ***Methods***

Twenty patients suitable for the PCDS but not involved in the randomised controlled trial were interviewed using a semi-structured interview schedule. Exploratory analysis using constant comparison and grounded theory techniques was used. Interviews and analysis proceeded iteratively through a series of rounds.

#### ***Results***

The acceptability of a local dermatology service was influenced by four inter-related themes: participants' perception of their need (urgency) for diagnosis or treatment, which influenced their willingness to wait for an appointment; their experience of primary-care services; their perception of what constitutes specialist expertise and factors relating to the convenience of the respective services.

### **Discrete-choice modelling**

#### ***Methods***

The interviews conducted in the qualitative study were also used to identify issues of importance to patients in regard to access to dermatology services and realistic levels for these attributes, in order to inform the design of a questionnaire. Four attributes of 'time waited', 'expertise', 'convenience' and 'individualised care' were included in a questionnaire which asked respondents to choose between 'best' and 'worst' scenarios for care. Individuals were sent questionnaires by post. People were randomly sent long or short versions of the questionnaire to answer a methodological question about the impact of questionnaire design on response rates.

#### ***Results***

Of 456 suitable patients, 240 agreed to participate. The response rate to the short version (103/121; 85%) was not markedly greater than to the long version (99/119; 83%). The most important attributes to patients appeared to be the thoroughness of the consultation and the expertise of the doctor, with convenience and waiting times being less important.

### **Discussion and conclusions**

The PCDS appeared to provide care which was more accessible and preferred by patients, with no evidence of a difference in clinical outcomes. These benefits were obtained at considerably greater cost. Although patients referred to the PCDS had much shorter waiting times than those seen at the hospital outpatient clinic, there was no overall beneficial impact on waiting times at the outpatient clinic.

## ***Evaluation of a Primary Care Dermatology Service***

The most important benefit to patients from establishing the PCDS appears to be in terms of accessibility. The location of a GPSI service is therefore crucial in order to maximise accessibility and convenience for as many people as possible. A notable finding from the qualitative research is that accessibility is a complex issue which is not simply based on geographical proximity. The discrete-choice modelling study also showed that improvements in access such as waiting times and convenience were less important to patients than the thoroughness of the consultation and the expertise of the doctor.

The benefits identified for the PCDS need to be compared with other ways of increasing service capacity, for example by providing extra resources to support existing hospital services, by managing demand differently within hospitals, or by employing different models of skill-mix in primary-care-based services.

**Disclaimer**

This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the SDO programme or the Department of Health

**Addendum**

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene and Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact [sdo@southampton.ac.uk](mailto:sdo@southampton.ac.uk)